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POLICY

the interacademy partnership

InterAcademy Partnership
ANNUAL REPORT
2018

Vision, Mission and Structure

The InterAcademy Partnership (IAP) is a global network of more than 130 academies of science, medicine and engineering that brings together the world's best scientific minds.

Individually and collectively, our member academies play a vital role in supporting, promoting and communicating science, influencing national and international policy on science-related matters, and fostering the next generation of young and talented scientists.

Reflecting the principles of its membership – independence and objectivity – IAP strives to be free from national or disciplinary bias to ensure that its actions and decisions are strictly merit-based and reflect the best scientific evidence available. Consequently, it is one of the leading organizations in the world with the intellectual capacity, credibility and independence to function as an authoritative and impartial adviser on scientific issues of regional and global importance.

Thus, IAP has four main strategic priorities:

- Provide evidence-based policy-relevant science, health, engineering and technology advice and perspectives on global issues.
- Position the InterAcademy Partnership as a recognised provider of independent, high quality, evidence-based global science advice.
- Strengthen the global scientific enterprise.
- Champion science and health education and work towards a global citizenry with high levels of health and science literacy.

In addition, IAP aims to:

- Develop and strengthen the global network of science, medical and engineering/technology academies, IAP's regional networks of academies, and the InterAcademy Partnership's member academies.
- Develop and strengthen partnerships with other organizations.
- Strengthen IAP operations and its fundraising strategy.
- Develop and implement an innovative and effective communications strategy.

IAP has three components: IAP Science and IAP Health based in Trieste, Italy; and IAP Policy based at the US National Academies of Sciences, Engineering and Medicine in Washington, DC, USA.

Helping to make IAP's work relevant around the world, its individual member academies are grouped into four regional networks: the Association of Academies and Societies of Sciences in Asia (AASSA), the European Academies Science Advisory Council (EASAC), the Inter-American Network of Academies of Science (IANAS) and the Network of African Science Academies (NASAC).

By bringing its member academies together into regional and global networks, IAP aims to increase the visibility and impact of the activities of academies as they work together, speaking with 'one voice' to governments, international organizations and other stakeholders.



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InterAcademy Partnership Annual Report 2018

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Message from IAP Presidents

Over the past year, the InterAcademy Partnership has raised its profile in the international science-policy arena. Together with our member academies and regional networks, we harmonized our strategies, operations and outreach, and undertook a series of high-profile global projects that have fully engaged not only our members and the scientific community, but also the wider society and the global political arena.

The 'Food and Nutrition Security and Agriculture' project funded by the German Federal Ministry for Education and Research (BMBF) (see pages 20-21) and the two projects funded by the Carnegie Corporation of New York, on 'Harnessing SEM to Address Africa's Challenges' and 'Improving Scientific Input to Global Policymaking' (see pages 18-19) are testament to this.

Through IAP, academies can amplify their impact as part of a unified voice, and the opening in March 2018 of the Office for Climate Education (OCE) (see pages 16-17), a spin-off of the 2017 IAP Statement on 'Climate Change and Education', shows academies can play a key role in shaping the global debate on today's most pressing issues. In 2018, IAP released two further statements - 'A call for action to tackle the growing burden of dementia' (see pages 14-15) and the 'IAP S20 Statement on Food and Nutrition Security and Agriculture' (see pages 20-21) - and we are sure their impact will be both tangible and long lasting.

In 2018 IAP also harnessed its energy and resources towards achieving other strategic priorities. Our Science Education Programme (SEP) (see pages 16-17) seeks to reform and develop science education on a global scale, especially in primary schools, with a pedagogy based on inquiry-based science education (IBSE). Pushing for this paradigm shift, in 2018 we released the Islamabad Declaration (see pages 16-17), and we assisted the Smithsonian Science Education Center (SSEC) to develop and pilot 'Mosquito!', the first of a series of curricula to be developed by the SSEC that will help primary school students around the world understand the Sustainable Development Goals (SDGs).

IAP aims to strengthen the global scientific enterprise, including by supporting the careers of young scientists. We have continued to work together closely with the Global Young Academy (GYA) to provide leadership training to the next generation of scientists and scholars. In addition, the eighth IAP Health's Young Physician Leaders (YPL) programme (see pages 22-23) provided another cohort of young physicians with the leadership skills they need to strengthen healthcare systems around the globe. IAP also continues to advocate strongly for women in science (see page 24) and responsible research (see pages 25-27). In 2018, we published our third book on inspiring female researchers, and presented the work of academies on biosecurity issues to the member states of the United Nations' Biological and Toxic Weapons Convention (BWC).

In 2018 IAP achieved much, but still our world faces many challenges and more remains to be done in order to attain the SDGs. This is why we must stand together as strong advocates for evidence-based decision-making: this is the strength of IAP, and we all must do our part to preserve our planet and build a more equitable society.



Volker ter Meulen



Depei Liu

IAP Presidents

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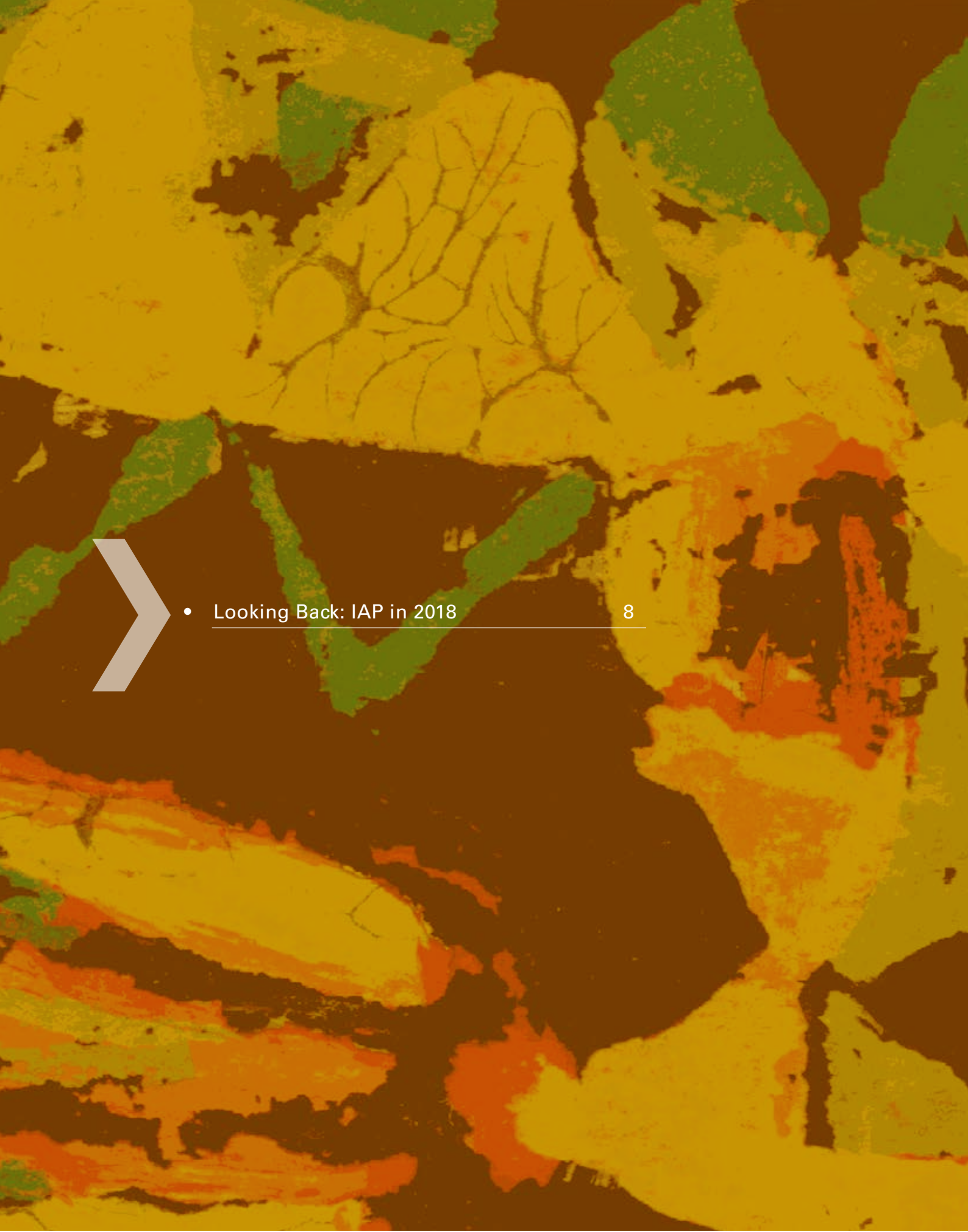


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- Looking Back: IAP in 2018

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Looking Back: IAP in 2018

During 2018, IAP saw continued progress on the implementation of its Strategic Plan (2016-2019).

IAP's four main strategic priorities are to:

- Promote a scientifically literate global society;
- Provide evidence-based advice and perspectives on global issues;
- Strengthen the global scientific enterprise; and
- Strengthen the global network, including supporting the work of IAP's regional networks and the creation of new academies in countries where they are not yet present.

Strategic Priority 1: Promote a scientifically literate global society

IAP continued to support its Science Education Programme (SEP) (see pages 16-17). In particular, activities included:

- the Smithsonian Center for Science Education (headed by Carol O'Donnell, a member of the IAP SEP Global Council), in partnership with IAP, published the first of a series of modules that will help school children analyse different aspects of the Sustainable Development Goals (SDGs);
- the African European Mediterranean Academies for Science Education (AEMASE) network has implemented teacher-training workshops in several countries; and
- a One Belt One Road curriculum is being developed that will help school children across many Asian and African countries understand the contributions that their cultures and civilisations have provided to scientific thinking.

Strategic Priority 2: Provide evidence-based advice and perspectives on global issues

IAP continued its work on three major science policy projects during 2018:

- The 'Food and Nutrition Security and Agriculture' project (FNSA, see pages 20-21), published a synthesis of the required transformation of food systems, with specific recommendations for each of IAP's four world regions. As part of the FNSA project, in July, the S20 academies held a side-event at the G20 Heads of State meeting in Argentina. The four regional reports were presented to Argentina's Minister of Science and Technology and Productive Innovation, and an IAP S20 Statement was released highlighting emerging points from the project;
- The 'Improving Scientific Input to Global Policymaking with a Focus on the UN SDGs' project (see pages 18-19), funded by the Carnegie Corporation of New York (CCNY), sought to empower academies and the wider scientific community to support the implementation of the Sustainable Development Goals (SDGs); and
- A second CCNY-funded three-year project, 'Harnessing Science, Engineering and Mathematics to Address Africa's Challenges' (see pages 18-19) focused on how African academies, in particular, can support sustainable development on the continent.

In addition, the IAP Statement 'A call for action to tackle the growing burden of dementia' was released in July (see pages 14-15).

A new project was also launched. Based on the 2015 EASAC report, 'Ecosystem Services, Agriculture and Neonicotinoids', which reviewed the effects of this class of insecticides on pollinators and other non-target insects, funding has been secured from the German Federal Ministry of Education and Research (BMBF) to undertake a review of the implications of the use of neonicotinoids in Africa. The first workshop was held in Pretoria, South Africa, in November 2018, hosted by the Academy of Science of South Africa (ASSAf). The project will conclude with the release of a report with recommendations for policymakers.



Participants at the first 'Neonicotinoids and their Impact on Ecosystem Services for Agriculture and Biodiversity in Africa' workshop, Pretoria, South Africa.

IAP was accredited as an observer organisation of the Intergovernmental Panel on Climate Change (IPCC). The decision was taken at the 47th Session of the IPCC, held in Paris, France in March. This means that IAP and its member academies have a voice in the international climate change negotiations, including future Conferences of the Parties (COP) meetings.

Strategic Priority 3: Strengthen the global scientific enterprise

IAP's work in this area focuses on three key areas:

- Supporting the careers of young scientists: Here IAP's contribution to the Global Young Academy (GYA) ensures that GYA members from developing countries can attend their annual conference and general assembly by offering travel support. In partnership with GYA, IAP also convenes young scientist leadership training workshops associated with major scientific conferences. In 2018, IAP partnered with the GYA to host a leadership training workshop in Panama at the CILAC event in October (see pages 22-23);
- Supporting women in science: With financial support from IAP and logistical support from the Australian Academy of Science, AASSA published 'Profiles of Women Scientists in Asia: Their inspirational stories' (see page 24). The book features short biographies of 50 women scientists proposed by AASSA member academies to inspire a new generation of girls and young women to consider careers in science; and
- Promoting responsible research practices: Much of IAP's work in this area in 2018 focused on the issue of new advances in biotechnology such as genome editing and how such advances are linked to the work of the Biological Weapons Convention (see pages 25-27).

In June, the partner organisations of Science International [IAP, The World Academy of Sciences (TWAS) and the International Science Council (ISC)] convened with other

key organisations, as well as several displaced scientists, to consider the needs of refugee and displaced scientists – and what can be done to support them. Science International partners will take forward the discussions begun during the Trieste workshop to develop a policy paper and recommendations for concrete actions. IAP was also among the 10 high-level science centres based in the Friuli Venezia Giulia region of Italy, whose leaders have agreed to develop research and study opportunities for scientists forced to flee from war and conflict in their home countries. The agreement was signed at a ceremony in September at the Abdus Salam International Centre for Theoretical Physics in Trieste (ICTP). According to the agreement, the 10 collaborating centres “will offer opportunities to affected scientists to enrich their professional skills, to foster their human and professional development and integration, and encourage their reintegration in their country of origin once conditions allow”. The growing recognition of the need for the international scientific community to address this issue was also highlighted during a special session organized by the International Science Council (ISC), TWAS and IAP at the 2018 World Social Science Forum (WSSF) in September in Fukuoka, Japan.

Strategic Priority 4: Strengthen the global network of academies

IAP supports its four regional networks, the Association of Academies and Societies of Sciences in Asia (AASSA, Asia/Pacific); the European Academies' Science Advisory Council (EASAC, Europe); the InterAmerican Network of Academies



Participants at the First Science International Working Group meeting on Refugee and Displaced Scientists, Trieste, Italy.



IAP President Volker ter Meulen.

of Sciences (IANAS, the Americas); and the Network of African Science Academies (NASAC, Africa). The networks help build the capacities of smaller and newer national academies. This is vitally important since policy formulation, implementation and review typically occur at the national level. The joint IAP meeting, hosted in September 2018 by the Swiss Academies of Arts and Sciences in Bern, Switzerland, recommended the *Academia Nacional de Ciencias, Cordoba, Argentina*, and the Global Young Academy (GYA – see pages 22-23) to the IAP General Assembly for election as IAP members. Furthermore, an IAP grant resulted in the establishment of the Kingdom of Eswatini Academy of Sciences (KEAS) on 27 November (see page 39).

In 2018, two IAP projects in particular, the ‘Improving Scientific Input to Global Policymaking with a Focus on the UN SDGs’ and the ‘Food and Nutrition Security and Agriculture’ (FNSA), involved active engagement from many academies around the world. Within the SDGs project, 68 senior academies and 17 young academies participated in four regional workshops

while 53 academies contributed to the regional and global FNSA studies. Academies worked together to share good practices and discuss common challenges, while applying the discussions to their own national contexts. Such global academy efforts show the true impact of harnessing the national and regional expertise of IAP’s network, resulting in high-quality, targeted recommendations for policymakers.

Outreach

In October, IAP launched its e-newsletter with news, events, updates and opportunities of IAP programmes and projects for IAP members and other interested parties. The newsletter provides quarterly updates on major project milestones, publications, opportunities and events. Subscribe via the IAP website.

In October, IAP reached the landmark number of 1,000 ‘followers’ on Twitter. Many of these followers are academies of science and medicine that are taking advantage of this simple tool to stay abreast of all the latest information shared by IAP. The *@IAPPartnership* Twitter account features news from IAP and its regional networks, and highlights reports or other activities from our member academies and the wider global science community. It also highlights opportunities for grant applications, professional opportunities to engage with and provide expertise to various UN bodies and other organisations, and other critical science policy news and information.

The website www.interacademies.org is also an important tool that IAP uses to disseminate its work and amplify the voice of its member academies. In November 2018, in coincidence to the launch of the FNSA report (see pages 20-21), it reached 62,590 page views, breaking its all-time monthly readership record.



Discussions during the International Science Council (ISC)-IAP session on refugee and displaced scientists at the World Social Sciences Forum (WSSF), Fukuoka, Japan. Mathieu Denis, ISC (right) with displaced scientist speakers from Turkey (left) and Yemen (centre).

Respect and Dialogue

'Respect and Dialogue' is an IAP initiative, led by IAP-Health co-chair Detlev Ganten, that aims at using the knowledge, understanding and expertise of IAP member academies - as well as other key international organizations – to promote better understanding of people and their cultures and ideas irrespective of origin, religion, ideology or personal priorities.



The first 'Respect and Dialogue' discussion took place on 14 October during the 2018 World Health Summit in Berlin. It was jointly chaired by Jeremy Farrar (Wellcome Trust) and Pierre Corvol (*Académie des Sciences*, Paris). Panellists represented cultural institutions such as the Humboldt Forum and the Library of Alexandria, religious actors, notably the Partnership for Religion and Sustainable Development (PaRD), science networks and experts nominated by several IAP member academies.

Participants agreed that the scientific community must take responsibility to reach out both to the public and to religious groups, e.g. through joint programmes in schools or museums, and to help build trust and make societies more resilient against populism, nationalism and extremism.

The 'Respect and Dialogue' initiative will join with emblematic places that have borne witness to peaceful intercultural dialogue throughout human history and that continue to drive this dialogue. Collectively, IAP member academies and such symbolic places will bring together experts and opinion leaders from science, policy, religion, industry, civil society and art, thereby contributing to global, open, free, peaceful, forward-looking and enlightened discussions in order to help overcome intellectual conflict and physical violence within and between societies.

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Promoting Global Health

IAP Health brings together the world's medical academies and academies of science and engineering with strong medical sections. Its aim is to improve health worldwide by providing evidence-based advice to governments and supporting the creation of projects by member academies to strengthen health research and higher education in their countries.



In July 2018, IAP Health issued the statement 'A Call for Action to Tackle the Growing Burden of Dementia'.

Tackling the Growing Burden of Dementia

The proportion of the world population that is 65 years of age or older has grown over the last decades, and this trend is set to continue. Because advancing age is the greatest known risk factor for dementia, this means that the number of those living with dementia worldwide will nearly triple by 2050. Most of this increase – from 47.5 million people to some 135.5 million – will occur among people living in low- and middle-income countries.

A mixture of brain diseases often underlies dementia, with many people showing changes consistent with both Alzheimer's disease (the most common form of dementia) and cerebrovascular disease. However, while we are learning more about the risk factors commonly associated with dementia, it continues to be a slowly progressive illness where the diagnosis is made after the process has been ongoing for several years.

To bring attention to this issue, on 5 July 2018 IAP Health issued 'A Call for Action to Tackle the Growing Burden of Dementia', a statement that specifically calls on governments and other healthcare providers to implement a number of practices. These include not only increasing awareness by educating the public about dementia and how to maintain brain health, but also supporting research to find and implement effective approaches (both pharmacological and non-pharmacological) to delay, prevent, slow-down, treat, ameliorate, and eventually cure the common causes of dementia. It also recommends investment in national healthcare systems, including both training a sufficient number and mix of carers as well as building the necessary infrastructure to ensure timely, competent person-centered care is available to those living with dementia and their caregivers.

"Our Call for Action is one which aims at developing an

evidence-based and a public health orientated approach to this looming problem," explained Howard Chertkow, chair of the IAP Health working group that prepared the Statement.

"Ultimately," he added, "each country should make a clear assessment for each population of the potential for primary or upstream prevention of dementia. This should be followed by plans for secondary prevention, i.e. early detection followed by effective treatment, which is considered to be more effective at that stage than later. Such treatment would include both what is currently available and what should soon be developed through therapeutic trials. So-called tertiary prevention (mitigation of dementia and its ramifications through various therapies and end of life care for those with dementia) also needs to be ramped up."

The Statement has also been published in the Journal of Prevention of Alzheimer's Disease. The article 'An Action Plan to Face the Challenge of Dementia: International Statement on Dementia from IAP Health' was written by Howard Chertkow, on behalf of the Research Executive Committee of the Canadian Consortium on Neurodegeneration in Aging and the IAP Dementia Statement working group.

World Health Summit and the M8 Alliance Statement

Global health is central to the Sustainable Development Goals and international organisations, governments and non-state actors are increasingly joining forces to shape a more sustainable future. In 2018, many high-level political gatherings have reinforced the importance of including health in their deliberations: at the United Nations two high-level meetings discussed the challenges of non-communicable diseases and tuberculosis, and the G20 continued its series of health ministers' meetings with a focus on childhood obesity.

An integrated support of all Sustainable Development Goals (SDGs) is in fact vital to achieving SDG #3, 'Ensure healthy lives and promote well-being for all at all ages'.

IAP is part of the M8 Alliance of Academic Health Centres, Universities and National Academies, a collaboration



In 2018 the World Health Summit, the M8 Alliances' annual conference, celebrated its 10th anniversary.

between academic institutions committed to improving global health. Working together with political and economic decision-makers, this think tank's primary goal is to develop science-based solutions to health challenges all over the world. In 2018 the M8 Alliance chose the World Health Summit (WHS, 14-16 October 2018), its annual conference and one of the world's most prominent strategic fora for global health, to issue the Berlin Declaration 'Health is a Driving Force for the Sustainable Development Goals'. This document stresses the fact that only if we step up our actions considerably will we be able to achieve the targets set in SDG3. In particular, we need to accelerate impact to achieve universal health coverage and health equity, especially in view of the high level of migration, mobility of populations and the many emergencies worldwide. The statement also recognises the warning voice of the latest report of the Intergovernmental Panel on Climate Change (IPCC) and the need to address climate change to support health, and emphasises that we must address violence and sexual exploitation as public health issues.

The year 2018 marked the 10th anniversary of the WHS, and to celebrate it Detlev Ganten, IAP Health Co-chair and WHS President, released 'Science Has to Take Responsibility. 10 Years World Health Summit - The Road to Better Health for All', an opinion article published in the scientific journal 'Frontiers in Public Health'.

At the WHS, IAP, in collaboration with the German National Academy of Sciences, Leopoldina, also presented a session introducing its Food and Nutrition Security and Agriculture project (see pages 20-21).

The WHS also welcomed a cohort of 21 new IAP Young Physician Leaders (YPLs), and the WHS Regional Meeting in Coimbra (19-20 April 2018), hosted 12 YPLs from Portuguese-speaking countries (see pages 22-23).

Challenges and priorities for global mental health research in low- and middle-income countries

Mental health and substance use disorders account for 7.4% of the global burden of disease, and make up the greatest economic cost of non-communicable diseases on low- and middle-income countries (LMICs). In LMICs, severely underfunded mental health services and shortage of workforce prevent the majority of people from receiving appropriate treatment for mental health problems. Additionally, the low capacity for mental health research hinders introduction of cost-effective and regionally tailored interventions. To analyse and tackle this issue, the Academy of Medical Sciences, UK, and IAP Health convened a policy workshop in London (28-29 June 2018). Building on the Academy's report from 2008 on global mental health, this workshop brought together experts from both the UK and LMICs to explore the existing barriers and challenges to strengthening mental health services in LMICs. On the basis of the discussed evidence, the workshop identified actions to strengthen mental health systems in LMICs and achieve mental health targets in the Sustainable Development Goals.

The Academy of Medical Sciences and IAP then published a meeting report that outlines the proposed next steps to improve the mental health systems in LMICs, and stresses the fact that long-standing issues remain to be addressed, including financing for mental health services and research, and the perennial issue of stigma. There also remains a significant need to develop capacity, building on newly established regional centres of excellence and networks in LMICs, as well as new virtual opportunities to build leadership competencies.



The IAP Health Executive Committee met in Manila, hosted by the National Academy of Science and Technology, Philippines (NAST PHL).

IAP Science Education Programme

One of the major priorities of IAP is to help build a scientifically literate global society. For this reason, IAP seeks to reform and develop science education on a global scale, especially in primary and secondary schools, with a pedagogy based on inquiry-based science education (IBSE).

International Forum

In conjunction with the 2018 meeting of the IAP Science Education Programme (SEP) Global Council, the International Forum on Science Education 'Quality Science – Education at Schools: A must for quality higher education and economic development' was held in Islamabad on 9 April 2018, hosted by the ECO Science Foundation, the High Education Commission of Pakistan, the Pakistan Academy of Sciences and Alif Ailaan. The forum attracted more than 200 participants from 12 countries, as well as several diplomats from Pakistan-based embassies. At the close of the forum, participants released the Islamabad Declaration which, among other things, calls on IAP member academies to lobby their national governments to establish more interactive science museums and science centres; and on industry, particularly the infrastructure and digital technology related enterprises, to assist academies and their national governments to enhance STEM (science, technology, engineering and mathematics) education using the inquiry-based science education (IBSE) approach.



Fusion of Civilisations

Since the IAP SEP Global Council meeting in Khartoum,



Dato Lee Yee Cheong, chair of the IAP SEP Global Council, at the first 'The Belt and Road Teenager Maker Camp and Teacher Workshop', Beijing, China.

Sudan, in February 2017, work has progressed on developing a 'Fusion of Civilisations' science curriculum for primary school children along the 'Belt and Road' countries. Four planning and drafting workshops were held during 2018, mostly on the side of other IAP SEP events – in Islamabad in April, in Bangkok in August, in Beijing in September, and in

Nanjing in December. A curriculum has now been developed and will be piloted and further refined before being published.

Science for Global Goals

As reported in 2017, with funding secured from the Gordon and Betty Moore Foundation provided to the Smithsonian Science Education Center (SSEC) (represented on the IAP SEP Global Council), an education module: 'Mosquito! How



Can We Ensure Health for All from Mosquito-borne Diseases' was developed and piloted. The final version, available in both English and Spanish, was released in May 2018 in Panama. The launch event featured 45 teachers and their 1,600 students. 'Mosquito!' has also been implemented in Malawi at the Jacaranda School of 400 orphaned students.

'Mosquito!' is the first of a planned series of curricula to be developed that tackle different aspects of the SDGs: the 'Smithsonian Science for Global Goals' series. The next module – preparations for which have already begun – will be on nutrition and food security. IAP has provided names of several experts from the FNSA project (see pages 20-21) to act as advisers and reviewers.

The quality of the 'Mosquito!' module was recognized when



Implementing 'Mosquito!' at Jacaranda School, Malawi.



Carol O'Donnell (right), director of the SSEC, with the 2018 Smithsonian Education Award for Achievement and Innovation at the award ceremony that took place on 13 December 2018 at the Smithsonian Castle Commons in Washington, DC, USA.

it was awarded the 2018 Smithsonian Education Award for Achievement and Innovation.

AEMASE

A major outcome of the third Africa-Mediterranean-European Academies for Science Education conference (AMEASE III) held in Paris in October 2017 was an agreement to work towards establishing 'Centres for Education in Science in the Africa-Mediterranean-European' region (CESAME). At the time, proposals were received from six African countries (Benin, Cameroon, Egypt, Morocco, South Africa and Tunisia) as well as from the Abdus Salam International Centre for Theoretical Physics (ICTP), Italy.



Participants at the 'Inquiry-Based Science Education, an introduction' training workshop held at ICTP in Trieste, Italy (photo courtesy of Joe Niemela).

In 2018, teacher training workshops were held in Benin and at ICTP. The aim now is to develop a proposal for major funding, ideally to move from occasional training workshops to permanent centres for science education.

Climate Change Education

The IAP Statement on 'Climate Change and Education' (led by the *Académie des sciences*, France) was released at the 'One Planet Summit' in Paris, France, in December 2017, held under the auspices of the President of France, Emmanuel Macron.

As a follow-up, the Office for Climate Education (OCE) was founded in March 2018 by *La main à la pâte* (LAMAP). The OCE is now operative and has begun producing resources for science teachers that are aligned with the various outputs of the Intergovernmental Panel on Climate Change (IPCC).

Following a brainstorming meeting at UNESCO headquarters in Paris in December 2018, discussions are ongoing for consideration of OCE as a UNESCO Category 2 centre supported by the Government of France.

As part of the 10th Anniversary of the International Science, Technology and Innovation Centre for South-South Cooperation under the Auspices of UNESCO (ISTIC), a 'High-Level Conference on Climate Change Education' took place on 7-9 May 2018 in Kuala Lumpur, Malaysia, with the support of IAP. Some 130 delegates from 20 countries attended the event, which concluded with the release of a declaration and recommendations calling on stakeholders to initiate follow up events on climate change education and closer collaborations among relevant international organisations to accelerate the effective implementation of climate change education throughout the world.



Following the success of the High-Level Conference on Climate Change Education, a 'Training Workshop for IBSE Master Trainers on Climate Change Education' was held in Kuala Lumpur on 27-30 August 2018.

The workshop was attended by 37 participants including nine international participants representing five countries. It unfolded in two parts: the first part focused on climate change education, which was facilitated by the Office for Climate Education; while part two focused on how make trainers more effective, facilitated by trainers from the Ministry of Education, Malaysia.

Science Literacy

The mandate of the IAP SEP also includes science literacy.

To this end, a forum on 'Promoting Science Literacy through National Museums of ASEAN Countries', was held on 16-26 August 2018, hosted by IAP SEP Global Council member, the National Science Museum of Thailand.

The forum was organized as part of the Thai National Science and Technology Fair held in Bangkok. Four members of the IAP SEP Global Council attended along with representatives of national museums and agencies associated with science communication and science literacy from Indonesia, Malaysia, Myanmar, the Philippines, and Thailand. Representatives from the Paris-based Office for Climate Education, and the UNESCO Principal Regional Office for Asia and the Pacific also attended. The forum provided a platform to share experiences of utilising existing resources to raise public science literacy. The resources presented by the various speakers covered topics such as water, food security, waste management, health, energy and climate change.

Science for Policy

IAP and the SDGs

Two IAP Policy projects funded by Carnegie Corporation of New York, 'Improving Scientific Input to Global Policymaking with a focus on the UN Sustainable Development Goals' and 'Harnessing Science, Engineering and Medicine to Address Africa's Challenges', saw significant progress in 2018.

Both projects are exploring opportunities for IAP and member academies to influence global, regional and national policymaking as vital members of the global science community. Their common goal is to help raise awareness of global (United Nations) and regional (e.g. African Union) policy frameworks among the academies; to mobilise and build the capacity of academies to support these frameworks; and to develop long-term strategic partnerships with, for example, UN agencies. Each project is led by an international working group, drawn from nominations from IAP member academies, the Global Young Academy (GYA) and the International Science Council (ISC).

In this final full year for both projects, their focus was on accelerating efforts to facilitate open dialogue amongst academies and policymakers and on distilling practicable recommendations for the final project reports.

Improving Scientific Input to Global Policymaking

Launched in August 2016, this project explores opportunities for academies to support more effectively the implementation of the UN Sustainable Development Goals (SDGs), encouraging academies to collaborate with key stakeholders and adopt good practices.



Participants of the IANAS regional SDGs workshop work together to create an SDGs action plan, hosted by the Mexican Academy of Sciences, May 2018.

Chaired by Jinghai Li (China) and Eva Alisic (Australia), the project Working Group met in Bern, Switzerland, in September 2018, hosted by the Swiss Academy of Arts and Sciences. At this fourth and final meeting, the Working Group heard insights from invited experts: Monika Linn,

UN Economic Commission for Europe (UNECE); Till Berger, Swiss Department of the Environment, Transport, Energy and Communications; Peter Messerli, Chair of the Expert Group for Global Sustainable Development Report (GSDR) 2019; and leadership of the Swiss Academies of Arts and Sciences. These high-level speakers presented initiatives to support the implementation of the SDGs and proposed ways in which IAP and its member academies can support the GSDR process. The Working Group also discussed key themes and recommendations of the project and dissemination of the final report.

The meeting was held alongside with the IAP Joint Board meetings, providing an important opportunity for the Working Group to discuss the project's emerging recommendations with the IAP leadership. These discussions later informed the theme and planning of the IAP Conference and General Assembly in April 2019 in Songdo, Korea, 'Science and the SDGs: The role of academies', as well as IAP's Strategic and Implementation Plans (2019-2022).

In addition, four regional workshops were delivered in partnership with each of the four IAP regional networks: IANAS (Mexico City, Mexico, 29-30 May), AASSA (Kuala Lumpur, Malaysia, 13-14 August), EASAC (Halle, Germany, 10-12 September) and NASAC (Nairobi, Kenya, 19-20 September). Participants comprised senior and young national academicians, GYA members, policymakers and other science and policy practitioners from each region. Dynamic and participatory, the workshops encouraged participants to explore ways of engaging with the SDGs at regional, national, institutional and individual levels. Opportunities identified for engagement included the ongoing Voluntary National Reviews (VNRs) and the UN Regional Commissions' annual fora on sustainable development and their regional progress reports on implementation of the SDGs. Participants developed voluntary regional action plans for the short, medium and long term, which will inform future regional strategic plans and programmes. These plans included ways in which academies can engage in their respective national contexts, whether they are large or small, well supported or financially challenged.

Project results were also presented at a number of international science meetings including each of the five UN Regional Fora on Sustainable Development¹ (UNECE: in March, Geneva, Switzerland; ESCAP: in March, Bangkok, Thailand; ECLAC: in April, Santiago, Chile; ESCWA: in April, Beirut, Lebanon; UNECA: in May, Dakar, Senegal), the UN STI Multistakeholder Forum (in June, New York, USA), and the CILAC Open Science Forum for Latin America and the Caribbean (in October, Panama City, Panama).

This project complements SDG-related initiatives of ISC, the GYA, the International Network of Government Science Advisers (INGSA) and other organisations.

¹ UN Economic Commission for Europe (UNECE), UN Economic and Social Commission for Asia-Pacific (UNESCAP), UN Economic Commission for Latin America and the Caribbean (UN ECLAC), UN Economic and Social Commission for Western Asia (UN ESCWA), UN Economic Commission for Africa (UNECA)

Harnessing Science, Engineering and Medicine to Address Africa's Challenges

Launched in September 2016 as a companion to the above SDGs project, this project specifically explores opportunities for African academies to support the implementation of both the SDGs and the STI Strategy for Africa (STISA), underpinning UN Agenda 2030 and African Union Agenda 2063, respectively.

Chaired by Robin Crewe (South Africa) and Oyewale Tomori (Nigeria), the Working Group met for the fourth and final time in November in Cotonou, hosted by the Benin Academy of Sciences, Arts and Letters, immediately following the Annual Meeting of African Science Academies (AMASA). The Working Group welcomed insights from invited experts from the Benin academy, the newly launched Benin Young Academy of Science, the GYA, NASAC, and INGSA-Africa. Claude Borna, Managing Director and Chief Innovation Officer at Sèmè City Development Agency, Benin, spoke on opportunities for senior and young academies in Africa



The Working Group of the IAP project, 'Improving Scientific Input to Global Policymaking with a focus on the UN Sustainable Development Goals,' held their final meeting at the Swiss Academy of Arts and Sciences, September 2018.

to work together, along with partners in the innovation community, to advance Africa's sustainable development.

During 2018, efforts focused on developing, and fundraising for, two new pilot programmes: the "African Academies Diaspora Fellowship Programme" (AADFP), and the 'Africa Science Advice for Policy Leadership Development Programme', with a workshop and fellowship component. The AADFP provided support for African academies to work with African diaspora members on policy initiatives or other activities designed to strengthen the host academies. With donations from the Academy of Science of South Africa; the German National Academy of Sciences, Leopoldina; the Royal Society (UK); IAP Working Group member T.J. Higgins (Australia), and a matching grant from the Carnegie Corporation of New York, a total of US\$75,000 was awarded to seven grantees (host academies: Burundi Council of Young Scientists, Ghana Young Academy, *Académie Nationale des Sciences et Techniques du Sénégal*, Nigerian Academy of Science, Nigerian Young Academy, South African Young Academy of Sciences, and the Sudanese National Academy of Sciences) selected through a competitive process. Diaspora fellows collaborated with their host academies on a variety of scientific, policy, strategic or development



Participants of the AASSA regional SDGs workshop respond to a poll, hosted by the Malaysian Academy of Sciences, August 2018.

initiatives, in each case contributing specialized expertise and/or unique perspectives. Consistent with the focus of the wider initiative, all projects were designed to address aspects of one or more strategic frameworks: the host academy's own strategic plan; the NASAC strategic plan; STISA-2024; or the Sustainable Development Goals.

IAP worked in collaboration with Future Africa and the GYA to develop the 'Africa Science Advice for Policy Leadership Development Programme'. The component workshop and fellowships of this programme, to be implemented in 2019, are designed to support the professional development of emerging early-to-mid-career African researchers who are passionate about bringing science to serve society.

The project was also represented at a number of international science meetings including the Next Einstein Forum Global



Young academy participants of the EASAC regional SDGs workshop capture ideas for ways to support the implementation of the SDGs, hosted by the German Academy of Sciences, Leopoldina, September 2018.

Gathering in Kigali, Rwanda, in March; the UNECA Africa Regional Forum on Sustainable Development (in Senegal in May); the Annual Meeting of the African Science Academies (AMASA; in Benin in November); and the Science Forum South Africa (in Pretoria in December). All these sessions have had the dual benefit of not only helping to inform and develop the project, but also to raise the profile of IAP and its member academies amongst key stakeholders.

Food and Nutrition Security and Agriculture

The IAP Food and Nutrition Security and Agriculture (FNSA) global programme has resulted in the publication of reports from each of the four IAP regional networks of academies along with a final over-arching global synthesis. It is largely funded by the German Federal Ministry of Education and Research (BMBF).



Representatives of the IAP 'Food and Nutrition Security and Agriculture' project at the S20 meeting held in Rosario, Argentina, on 24-25 July 2018.

There is a continuing rise in the number of undernourished people worldwide. Other nutrition targets are also being missed, while climate extremes and variability are threatening to reduce and reverse previous gains made in food security.

The IAP Food and Nutrition Security and Agriculture (FNSA) project brought together the four regional academy networks from Africa, Asia, the Americas and Europe, to provide new impetus to the analysis of shared opportunities and challenges in the areas of food and nutrition security and agriculture. The project covered malnutrition in all its forms: undernutrition and micronutrient deficiencies, as well as overweight and obesity. The academy networks all published their regional reports either in late 2017 or early 2018. The final global report, advising on those matters that should be addressed in collaborative and interconnected ways, was published in November 2018. All reports are available at www.interacademies.org/37646/Food-and-Nutrition-Security-and-Agriculture.

The potential power of IAP in adding value to the large body of work already undertaken by other groups resides in the distinctive features of this project. These include: the combined global resources of the IAP membership to provide evidence-based advice; capitalising on expertise across

multiple scientific disciplines together with an emphasis on the central importance of basic research; using a common starting point on priority themes for the regions, to bring order to a wide diversity of evidence; recognising that setting priorities for increasing agricultural production should take account of the pressures on other vital natural resources; and identifying when there is consensus or when further work is required to clarify and resolve differing views, while embracing diversities in agriculture and food systems and in political systems.

This inclusive project (experts from more than 50 IAP member academies were invited) explored both the opportunities for better use of the scientific evidence currently available for informing policy options and supporting innovation and practice, and identified knowledge gaps that need to be filled by new research. The regional academy networks recognised that there is a collective imperative to be more ambitious in identifying and using the scientific opportunities for systems in transition in an uncertain and increasingly connected world.

Key recommendations in the synthesis global report include the need for:

- Upgrading scientific infrastructure and commitment to sustained funding of research, including at trans-regional level, sharing expertise and facilities to build capacity.
- Developing sustainable food and nutrition systems, taking the systems perspective to deliver health and well-being.
- Understanding food production and utilisation issues, covering considerations of efficiency, sustainability and diversity of resources.
- Capitalising on opportunities coming within range in the biosciences and other rapidly advancing sciences.
- Emphasising the transformation to a healthy diet.
- Addressing the food-energy-water-health linkages.
- Promoting activity at the science-policy interface, supporting the Sustainable Development Goals (SDGs), and considering international options for providing evidence-based advice for FNSA.

Significant media impact was obtained at the time of the appearance of the over-arching synthesis report. Regional and global outputs have been presented at various global events including: the S20 academies meeting (Rosario, Argentina, July 2018); the World Health Summit (Berlin, Germany, October 2018); and the International Union for Food Science & Technology (Mumbai, India, October 2018). At the S20 event, in particular, Argentina's Minister of Science and

Technology and Productive Innovation, Dr Lino Baraneo, expressed his appreciation at receiving the four regional reports that he said would help to inform the work of the G20. There has also been a project publication in *The Lancet Planetary Health*.

An evaluation report on the FNSA project assessed the efficacy of individual steps in the project design and conduct and lessons for further improving involvement of the regional academy networks in future project planning and implementation. Project impact has been monitored in various ways including: feedback from policy customers (e.g. globally in G20/S20 Group and at regional and national levels) and other stakeholders (e.g. informing the International Union of Food Science and Technology strategy); participation in major scientific events; coverage by written and broadcast media (the total number of views is estimated at more than 2 million for written reports and over 10 million for broadcast events); traffic on the IAP website (with a significant peak at time of publication of global report); scientific publications; and other uses of project expertise (e.g. IAP FNSA experts are now collaborating with the Smithsonian Science Education Center to develop an educational module on food and nutrition, see pages 16-17).

It is expected that the five reports and other FNSA programme outputs will catalyse continuing follow-up at national, regional and global levels.



Supporting Young Scientists and Young Physicians

IAP's third strategic priority focuses on strengthening the global scientific enterprise. A key component of this is supporting the careers of young scientists and assisting them to engage with policy-makers. Likewise, IAP Health provides leadership training for Young Physician Leaders (YPL) as part of its efforts to strengthen healthcare systems around the globe.



Narong Sirilertworakul, president, National Science and Technology Development Agency (NSTDA), Thailand, opened the international conference in Thailand; to his right Flavia Schlegel (UNESCO), IAP President Depei Liu, and Lisa Herzog, Technical University of Munich (© 2018 Global Young Academy).

Global Young Academy

The Global Young Academy (GYA) provides a rallying point for outstanding young scientists from around the world to come together to address topics of global importance, and IAP has been supporting it since its establishment in 2010.

In May 2018, GYA members and other invited experts from more than 50 countries came together at the 8th GYA Annual General Meeting (AGM) and International Conference for Young Scientists in Pattaya, Thailand, to discuss challenges and possibilities for sustainable and healthy ageing. IAP sponsorship assisted the participation of GYA members from low- and middle-income countries.

The conference concluded with the release of a statement outlining recommendations from the international, interdisciplinary perspective of young scientists and scholars in support of a sustainable approach to healthy ageing.

During the AGM, Connie Nshemereirwe (Uganda) and Tolu Oni (UK) were confirmed as GYA co-chairs for the coming year. The AGM also allowed space for various GYA working groups and 'incubators' to meet and discuss future workplans. Among these was the Bio2Bio group (Biodiversity for Survival via Biomedicine) group, which has also reached out to IAP's senior academies for experts to join their discussions.

The GYA's Bio2Bio working group also held a panel discussion at the World Social Science Forum in Fukuoka, Japan, on 25 September titled 'Biodiversity and biomedicine: sustainability for human health'. Discussion centered around the necessity to start a global initiative in urgent consolidation of the existing evidence, resources, and technology to promote sustainable screening and protection of existing biodiversity. Such an initiative would help solve escalating problems in drug discovery and species extinction, and would contribute to achieving the UN's Sustainable Development Goals (SDGs) by 2030.

CILAC Forum

IAP-sponsored young scientists also joined scientists and scholars from around the globe to participate in the second CILAC Forum (Latin America and Caribbean Open Science Forum), which took place in Panama City, Panama, on 22-24 October 2018. CILAC participants discussed the role that science, technology and innovation must play in global sustainable development, especially in the Latin America and Caribbean region.



Co-organised by the GYA and IAP, a pre-conference 'Science Leadership' workshop for young scientists took place on 20-21 October. The workshop focused on building science leadership, communication skills and applications to using science to achieve the SDGs. IAP-sponsored young scientists joined several GYA members as well as two members of the TWAS Young Affiliates Network (TYAN). Teresa Stoepler, executive director of IAP Policy, represented IAP.

Young Physician Leaders

IAP Health's Young Physician Leaders (YPL) programme held two leadership training workshops in 2018 – one at the World Health Summit (WHS) Regional Meeting in Coimbra, Portugal, on 17-18 April, and one at the global World Health Summit in Berlin, Germany, on 12-16 October.

For the Coimbra event, 12 physicians under 40 years of age nominated by member academies from Portuguese-speaking



Participants at the GYA 8th International Conference for Young Scientists at the conference venue in Pattaya, Thailand (© 2018 Global Young Academy) with IAP President, Depei Liu (front, centre).

countries were selected. The participants came from from Brazil, Cape Verde, Guinea-Bissau, São Tomé and Príncipe, and Portugal. The event was organized in partnership with Coimbra Health, formed by the University of Coimbra and the Coimbra Hospital and University Centre (CHUC), in special collaboration with the local Faculty of Medicine and Faculty of Economics.

Activities aimed at exploring multiple models for effective leadership, assessing perceived leadership strengths and identifying areas for improvement, exploring the dynamics of working as part of a team and developing mentorship and peer learning relationships to support professional



Ai Huey Tan and Muhammad Zaman Assir during the Young Physician Leaders training workshop at the WHS, Berlin, Germany

leadership development. The workshop was chaired by Jo Ivey Boufford (IAP Health) with local support from Teresa Trigo Oliveira (Faculty of Economics) and Nuno Madeira (Faculty of Medicine).

Participants also attended the two-day WHS Regional Meeting (19-20 April), where two of the YPL cohort (Cláudia Silva, Cape Verde, and Sofia Morais, Portugal) had the opportunity to participate in the opening session

The annual event in Berlin welcomed an additional cohort of 21 YPL from 21 countries. Among them Karadag Caman Ozge (Turkey) was selected to give a short speech on behalf of the group during the opening ceremony – sharing the stage with such notable speakers as Detlev Ganten, president of the World Health Summit and IAP Health co-chair; Jens Spahn, German Minister of Health; and Matshidiso Rebecca Moeti, director of the World Health Organization Regional Office for Africa.

As usual, as part of the leadership training, participating YPL were challenged to develop and present a session in the WHS proper. The session ‘Better Leadership: Improved Health. The Leadership we want’ was well attended and appreciated by the diverse audience.



Jo Boufford, IAP Young Physician Leaders Project Coordinator, during a session of the YPL training workshop, Berlin, Germany.

This IAP YPL programme is organized in collaboration with the European School of Management and Technology (ESMT) and with the support of the Tides Foundation, the Charité, Universitätsmedizin Berlin and the Bayer Science & Education Foundation.



Detlev Ganten, IAP Health co-chair and Founding President of the World Health Summit, with the IAP Young Physician Leader Ozge Karadag at the WHS opening ceremony, Berlin, Germany.

Supporting Women in Science

Women play a pivotal role in advancing science and they are critical members of science, medicine and engineering academies all over the world. IAP has identified Women in Science as an important theme and all the four Regional Networks of IAP have been actively engaged on deliberations relevant to their regions.

On 29 October 2018 the Special Committee on Women In Science and Engineering of the Association of Academies and Societies of Sciences in Asia (AASSA) launched the book, 'Profiles of Women Scientists in Asia: Their inspirational stories'. The report profiles 50 researchers across AASSA membership countries in a celebration of the dedication, passion and resilience of women in science throughout the region.

The collection presents the moving stories of women pioneers who encountered biases and frustration, who overcame various difficulties and obstacles in their careers and personal lives, and who finally succeeded in achieving great accomplishments in their pursuit of science. It is also a collection of inspiring, trail-blazing stories that it is hoped will inspire more young women and girls to follow these pioneers into science and technology fields.

As AASSA President, Yoo Hang Kim, wrote in the book's foreword: "Just as these pioneers had their own mentors and role models who discovered their talent and encouraged and guided them in their scientific careers, the 50 women scientists profiled in this report will become role models themselves for the future generation of young girls in their pursuit of science."

The preparation and publication of the book was funded by IAP and AASSA and managed by the Australian Academy of Science. It adds to a series of publications on the same theme developed by IANAS (2015) and NASAC (2017).

On 8-10 March NASAC co-organised the International Forum for Women and Sustainable Development in Africa (WSDA), in Dar es Salaam, Tanzania. The event was a collaboration

between NASAC, the Tanzania Academy of Sciences and the *Académie des Sciences* in partnership with the Bill and Melinda Gates Foundation, the French Development Agency, the French Institute for Development Research, the Sanofi Espoir Foundation and IAP. This forum provided a platform for scientists to dialogue with and, provide evidence-informed advice to policy makers on the value of women's participation and inclusion in national frameworks for realization of the Sustainable Development Goals (SDGs); in particular, SDG #5 on 'Gender Equality'.



Three publications supported by IAP: 'Women scientists in the Americas', 'Profiles of women scientists in Asia', and 'Women in science: Inspiring stories from Africa'.

Biosecurity and Responsible Research

IAP established its **Biosecurity Working Group** in 2014. Since then it has been promoting responsible research practices by organizing international workshops, and presenting the work of academies on biosecurity issues to the member states of the **United Nations' Biological and Toxic Weapons Convention (BWC)**.

Tackling Dual-use Research

In 2018, IAP joined the Croatian Academy of Sciences and Arts, the Croatian Society for Biosafety and Biosecurity, and the US National Academies of Science, Engineering and Medicine (NASEM) to host the international workshop 'The Governance of Dual Use Research in the Life Sciences: Advancing global consensus on research oversight'. More than 70 participants from 30 different countries and five international organisations took part in the event held in Zagreb, Croatia, on 10-13 June 2018.

Workshop participants discussed the concept of governance as a layered system across the research landscape. This was followed by examples of research governance in the life sciences provided by participants from Australia, Italy, Malaysia and the USA, as well as the iGEM Foundation. Breakout sessions then collated inputs of the invited experts.

The key results and emerging themes were then assembled into a report published by NASEM in December and presented at the 2018 Meeting of States Parties (MSP) of Biological Weapons Convention (BWC) held in Geneva, Switzerland (see below).



Participants at the workshop on 'Governance of Dual Use Research in the Life Sciences: Advancing global consensus on research oversight', Zagreb, Croatia.

The Biological and Toxin Weapons Convention

Prior to the December MSP, the BWC held its Meetings of Experts (MXP) in Geneva from 7 to 16 August 2018. Among the MXP meetings, two days were spent undertaking a 'Review of Developments in the Field of Science and Technology Related to the Convention'. To contribute to these discussions, IAP and NASEM organized a side event on 'Assessing Security and Governance Issues of Modern Biotechnology: Updates from Academies of Science'.

The session featured three presentations: Bert Rima (Queens University Belfast and member of various EASAC working groups) presented an overview of the IAP report 'Assessing the Biosecurity Implications of Genome Editing'; Michael Imperiale (University of Michigan) summarised a NASEM report 'Biodefense in the Age of Synthetic Biology'; and Katie Bowman (NASEM) gave an update on the deliberations that took place during the Zagreb workshop on 'Governance of Dual Use Research in the Life Sciences: Advancing global consensus on research oversight'.

This session was attended by more than 60 participants, including representatives of the national delegations of Belgium, Brazil, China, Cuba, Germany, Greece, Hungary and Switzerland, as well as a representative of the Organization for the Prohibition of Chemical Weapons (OPCW) and the chair of the BWC's December Meeting of States Parties (MSP).



The IAP-US NASEM side event on 'Assessing Security and Governance Issues of Modern Biotechnology: Updates from Academies of Science' at the Meetings of Experts of the Biological Weapons Convention in Geneva, Switzerland, in August (photo courtesy of Richard Guthrie).

The 2018 MSP of BWC was held in Geneva, Switzerland, on 4-5 and 7 December. As well as reviewing the outputs from August's MXP, States Parties discussed ways to advance the goals and ideals of the BWC, including its clause on 'universality'.

On 5 December, NASEM and IAP hosted a side event to promote the release of the Croatia workshop report: 'Governance of Dual Use Research in the Life Sciences: Advancing global consensus on research oversight', which was published on 3 December. IAP was represented by its Coordinator, Peter McGrath, and some 60 participants attended, including State Party representatives from Australia, China, Italy, Malaysia, Russia, Saudi Arabia, the



The IAP-NASEM side event at the 2018 Meeting of State Parties (MSP) of the Biological Weapons Convention (BWC), Geneva, Switzerland, in December.

UK and the USA.

The event helped place the newly published report into the context of a long engagement by IAP and its member academies on the issue of responsible research practices and examining the implications of new techniques in the biosciences such as genome editing and synthetic biology.

During another side event, 'EU Council Decision 2016/51 in support of the BWC', speakers reported on a series of EU-supported regional awareness-raising meetings that took place in Ukraine, Mexico, Jordan, South Africa and the Philippines during 2017 and 2018. NASEM and IAP had assisted with suggesting speakers and identifying participants for these events. IAP supported two participants (from the Philippines and Thailand) to attend the meeting in Manila, the Philippines (21-22 November 2018).

Engaging Social Scientists

The World Social Sciences Forum (WSSF) took place in Fukuoka, Japan, on 25-28 September on the theme 'Security and Equality for Sustainable Futures'. The organisers, the International Science Council (ISC), invited IAP to present a session to ensure that the issue of biosecurity – a growing concern given the many recent and rapid advances in biotechnology – was given due attention.

The IAP session, 'Engaging key stakeholders in addressing biosecurity challenges: Insights from the social sciences', included Sasha Kagansky (Far Eastern Federal University of Vladivostok, Russia, and member of the Global Young Academy, GYA), who presented an overview of some of the new biotechnologies that are causing concern in biosecurity discussions. Sue Meek (Australian National University) then discussed the challenges being posed to existing regulatory systems by recent advances in biotechnology. Subsequently, Robin Fears (EASAC Biosciences Programme) reviewed some of the relevant work by academies, while Jo Husbands (Scholar, Board of Life Sciences, US National Research Council and NASEM) focused her presentation on policies and practices within the scientific community for research with dual use potential.

Sam Weiss Evans (Tufts University, MIT and University of Cambridge) presented on 'This is not your "father's" biosecurity', arguing that the traditional ways used by nation

states to control security issues are no longer appropriate now that access to the techniques has become more widespread.

The session was summarized by developing the metaphor of a 'sphere of activity' where scientists are able to work, with limits imposed by a knowledgeable and engaged society.

Parts of the sphere may perhaps contract when issues of concern arise, but can expand once trust is gained, and that continued public engagement by the scientific community is therefore crucial to maintain a balance and for scientists to have an ongoing understanding of their responsibilities.




The IAP–US NASEM side event on 'Assessing Security and Governance Issues of Modern Biotechnology: Updates from Academies of Science' at the Meetings of Experts of the Biological Weapons Convention in Geneva, Switzerland, in August (photo courtesy of Richard Guthrie).



The IAP session on 'Engaging key stakeholders in addressing biosecurity challenges: Insights from the social sciences', at the World Social Sciences Forum (WSSF), Fukuoka, Japan.



Regional activities >



Association of Academies and Societies of Science in Asia (AASSA)



The Association of Academies and Societies of Sciences in Asia (AASSA), with the support and leadership of IAP, has been actively working to enhance collaboration and cooperation among academies, societies and scientists in Asia and Australasia. It is hosted by the Korean Academy of Science and Technology.



Participants at the AASSA-Indonesian Academy of Sciences (AIPI) workshop on 'SHARE Communication: The importance of media to engage research and development with public understanding', Jakarta, Indonesia.

The principal objective of the Association of Academies and Societies of Science in Asia (AASSA) is to achieve a society in Asia and Oceania in which science and technology play a major role in the development of the region. AASSA is a forum for scientists and technologists to discuss and provide advice on issues related to science and technology, research and development, and the application of technology for socio-economic development.

AASSA focuses on five major priorities: Sustainable Development in Asia (SDA), Science Education in Asia and the Pacific (SEAP), Women in Science and Engineering (WISE), Science, Health, Agriculture, Risk and Environment (SHARE) Communication, and Economic Advancement through Science, Technology and Innovation (EASTI). AASSA, with the support and leadership of IAP, has been actively working to enhance collaboration and cooperation among academies, societies and scientists in Asia and Oceania. Its Secretariat is hosted by the Korean Academy of Science and Technology.

International workshops

In 2018, AASSA activities focused on building the capacity of individual member academies, pushed for evidence-based policies, and encouraged the involvement of young scientists in its activities. Most notably, AASSA helped its member academies to implement long-term projects related to SDA, especially regarding the Sustainable Development Goals

(SDGs) #2 (Zero Hunger), #3 (Health), #4 (Quality Education), #6 (Clean Water and Sanitation), #11 (Sustainable Cities and Communities) and #13 (Climate Action).

In collaboration with its members – 33 academies and societies of sciences from 30 countries – AASSA organized five regional workshops that covered a wide range of topics related to the development of the Asia-Pacific region and the attainment of the SDGs: the AASSA-Indonesian Academy of Sciences (AIPI) workshop on 'SHARE Communication: The importance of media to engage research and development with public understanding' (6-7 August, Jakarta, Indonesia); the AASSA-Malaysian Academy of Sciences (ASM) regional workshop on 'Water-Borne Diseases' (15-16 August, Kuala Lumpur, Malaysia); the AASSA-Bangladesh Academy of Sciences (BAS) regional workshop on 'Promotion of Excellence in Science Education and Research' (12-13 September, Dhaka, Bangladesh); the AASSA-Far Eastern Branch of the Russian Academy of Sciences (FEB RAS) international workshop on 'Climate Change Adaptation and Mitigation: Sustainable agriculture and health security' (2-3 October, Birobidzhan, Russian Federation); and the AASSA international workshop on 'Promoting the role of Scientists and Media in Science and Health Communication: From policy to practice' (29-30 October, Bangkok, Thailand).

"Active, efficient and timely participation of various media is essential in alerting the outbreak of communicable diseases, providing accurate information about diseases and preventive measures, good dietary guidelines tailored to



Participants at the AASSA-Malaysian Academy of Sciences (ASM) Regional Workshop on 'Water-Borne Diseases', Kuala Lumpur, Malaysia.

each disease and general health promoting lifestyle lessons to the general public” said AASSA President Yoo Hang Kim in his welcome remarks to the AASSA international workshop in Thailand.

The first keynote speech was made by Poolsuk Janepanish Visudtibhan, Deputy Dean for Corporate Communication at Mahidol University's Faculty of Medicine Ramathibodi Hospital, who presented Rama Channel, Thailand's only



Participants at the AASSA-Bangladesh Academy of Sciences (BAS) Regional Workshop on 'Promotion of Excellence in Science Education and Research', Dhaka, Bangladesh.

health-focused TV channel. The second keynote speech was given by Abhi Veerakumanasivam, Chair of the Young Scientists Network-Academy of Sciences Malaysia and a leading expert in cancer research and science communication. A lively discussion followed each session. By the close of the workshop, participants agreed that academies should facilitate institutional mechanisms to forge collaboration and regular dialogues between scientists and the media, and that scientists should proactively engage with the media.

They also stressed the fact that governments should recognise that science drives economic growth and fosters innovation, while scientists must embrace 'non-traditional' storytelling techniques such as infographics, exhibitions,

demonstrations, and field-trips to present their findings, and should always avoid using jargon.

Together with IAP and the Academy of Sciences Malaysia, AASSA also hosted a regional workshop on 13-14 August in Kuala Lumpur, Malaysia, on how AASSA members can support the SDGs. Participants included representatives from 14 of the 30 AASSA member national academies and six young academies along with the International Science Council Regional Office for Asia-Pacific (ISC-ROAP); Global Young Academy (GYA) members from the region; and several representatives of the policymaking community. The workshop resulted in a voluntary action plan for how AASSA members could support the implementation of the SDGs.

Women in Science

Furthermore, on 29 October the AASSA Special Committee on WISE launched and disseminated the report 'Profiles of Women Scientists in Asia: Their inspirational stories' (see page 24). The report profiles 50 researchers across the AASSA member countries in a celebration of the dedication, passion and resilience of women in science. This project was funded by IAP and AASSA and managed by the Australian Academy of Science.

“It is evident that the women profiled in this publication have worked very hard over many years in order to succeed in their careers” wrote Cheryl E Praeger, Chair of the AASSA Special Committee for Women in Science and Engineering, in her foreword.

She also stressed the fact that some of them gave up careers abroad and instead elected to return to their home country to further their discipline, their own society and the world. “We salute the courage of these scientists, and of women scientists around the world, for their dedication and passion to use science to make the world a better place,” she added.



Participants at the AASSA-Far Eastern Branch of the Russian Academy of Sciences (FEB RAS) international workshop on 'Climate Change Adaptation and Mitigation: Sustainable agriculture and health security', Birobidzhan, Russian Federation.

Young Scientists

AASSA encourages young scientists' participation in various AASSA activities. For example, AASSA invited many young scientists as speakers including Veerakumarasivam, Chair of the Young Scientists Network-Academy of Sciences Malaysia, who gave a keynote speech at the Thailand workshop on health communication. Also, AASSA presents the AASSA President's young Scientists Award in conjunction with its activities. In 2018, AASSA gave seven awards with cash prizes at the Bangladesh workshop.

For additional information on AASSA, please visit:
www.aassa.asia
 Twitter: @AassaOnline



Participants at the AASSA International Workshop on 'Promoting the role of Scientists and Media in Science and Health Communication: From policy to practice', Bangkok, Thailand.

European Academies' Science Advisory Council (EASAC)



The European Academies' Science Advisory Council (EASAC), founded in 2001, currently includes one representative national science academy from each of the 25 EU member states, the Academia Europaea, the European Federation of Academies of Sciences and Humanities (ALLEA, which provides a complementary Europe-wide perspective), as well as representatives of the Norwegian and Swiss national academies of sciences. Its secretariat is hosted by the German National Academy of Sciences, Leopoldina. Through collaboration, EASAC is able to provide a collective voice of European science and provide independent advice to European policy-makers.



EASAC session on homeopathy with Dame Anne Glover at the EuroScience Open Forum (ESOF) in Toulouse, France.

EASAC is IAP's regional affiliated network for Europe and consists of 25 national science academies of the European Union Member States, Norway and Switzerland. Furthermore, the pan-European academy *Academia Europaea* and the association of all academies in geographical Europe, *ALLEA*, are represented in EASAC's governing council, and the Federation of European Academies of Medicine (FEAM) has observer status on the EASAC Council.

EASAC was established in 2001 to provide 'science-for-policy' in Europe, with a particular focus on policy makers and opinion formers in the institutions of the European Union (EU). The EU is the dominant political body in Europe, of key importance not only to Member States, but also to neighbouring countries.

The year 2018 was a particularly productive one for EASAC, with a number of achievements that can be summed up by: quality and quantity of output, media success, and strengthened member engagement.

Quantity and quality of output

Through EASAC, the European academies published a number of policy reports and shorter statements and commentaries: 'Negative Emission Technologies: What role in meeting Paris Agreement targets?' (February 2018); 'Extreme Weather Events in Europe: Preparing for climate change adaptation' (March 2018); 'Vaccination in Europe: An EASAC and FEAM commentary on the EC Roadmap' (April 2018); 'Commentary on Forest Bioenergy and Carbon Neutrality' (June 2018); 'Findings and Recommendations from the Smart Villages Initiative 2014-2017' (June 2018); 'EASAC and the New Plant Breeding Techniques' (July 2018); and 'Opportunities for Soil Sustainability in Europe' (September 2018). EASAC also strongly supported the publication of the global report by IAP – to which it had contributed the European analysis – on 'Opportunities for Future Research and Innovation on Food and Nutrition Security and Agriculture', in November 2018.

Furthermore, a number of journal publications were developed from the findings of these reports, statements and commentaries: 'Scientific opportunities for food and nutrition security' was published in *The Lancet Planetary Health* (9 January 2018); 'Action on food security' in *Chemistry and Industry* (20 February 2018); 'Assessing security implications



EASAC Council meeting, Bucharest, Romania.

of genome editing: Emerging points from an international workshop' in *Frontiers in Bioengineering and Biotechnology* (28 March 2018); and 'Addressing decreasing vaccine coverage in the EU' in *The Lancet* (28 April 2018).

Another type of output delivered by EASAC in 2018 were public events, organised mostly to launch or otherwise communicate EASAC's science-based advice to policy makers: the launch of the 'Negative Emission Technologies' report at the European Parliament in Brussels, Belgium, on 8 March; the launch of the 'Opportunities and Challenges for Research on Food and Nutrition Security and Agriculture in Europe' report at the *Palais des Académies* in Brussels, Belgium, on 26 April; the EASAC and IAP workshop on the Sustainable Development Goals in Halle, Germany, on 10-12 September; the launch of the 'Opportunities for Soil Sustainability in Europe' report in Brussels, Belgium, on 26 September; and the EASAC-FEAM symposium on vaccination in Brussels, Belgium, on 22 October.

Media success

Press coverage of EASAC's publications was extensive in 2018. EASAC reports were picked up and commented on by a wide range of leading international and European titles, such as: the BBC, New York Times, Huffington Post, EurActiv, *Le Figaro*, *Le Monde*, *L'Obs*, *The Times*, *The Guardian*, *The*



Presentation of the EASAC report 'Negative emission technologies: What role in meeting Paris Agreement targets?', Brussels, Belgium.

Independent, *El País*, *Dagens Nyheter*, *Helsingin Sanomat*, *La Repubblica*, *Frankfurter Allgemeine Zeitung*, and *Süddeutsche Zeitung*. EASAC also has a good number of relevant followers of its Twitter account and a good presence on this social media platform in 2018.

In November 2018, EASAC was awarded the 'Think Tank of the Year' award by Public Affairs Awards Europe, which is Europe's most prestigious public affairs award. In previous years, the award had been given to such influential think

tanks as BREUEGEL and the Centre for European Policy Studies (both of which have substantially larger budgets and staff teams than EASAC). EASAC was honoured in recognition of the quality and reach of its contribution in 2018 to the wider policy debate in Europe.

Member engagement

EASAC member academies are deeply engaged in EASAC's work in a number of ways. Crucially, European national science academies nominate their experts to serve on EASAC's working groups and steering panels, covering also all their travel expenses (experts give their time for free). Furthermore, members often organise meetings of working groups and steering panels at their own academy, which sometimes requires substantial logistical support and as



László Lovász, President of the Hungarian Academy of Sciences, at the EASAC Joint Meeting of the Energy and Environment Steering Panels, Budapest, Hungary.

well as local financial support. In 2018, EASAC's member academies hosted the following meetings: Working Group meeting on 'Decarbonisation of Transport' at the Croatian Academy of Sciences and Arts in Zagreb; Environment and Energy Steering Panel meetings at the Hungarian Academy of Science in Budapest; Environment Steering Panel meeting at the Royal Irish Academy in Dublin; meetings of the EASAC Bureau and Council at the Austrian Academy of Sciences in Vienna; a symposium on vaccination (together with FEAM) at the Royal Netherlands Academy of Sciences; and meetings of the EASAC Bureau and Council at the Romanian Academy in Bucharest.

Furthermore, with support from IAP, it was possible to hold a major workshop on the Sustainable Development Goals (SDGs) and the UN's 2030 Agenda, at the German National Academy of Sciences Leopoldina in Halle in September 2018 (see pages 50-52). Some 50 representatives of EASAC member academies attended. EASAC integrated the specific focus of the SDGs into a wider context of European academies' capabilities and possible challenges in the provision of science-based policy advice and the potential need for capacity building activities.

For additional information on EASAC, please visit:

www.easac.eu

Twitter: @EASACnews

Inter-American Network of Academies of Science (IANAS)



IANAS is a network of 21 academies of science and three scientific organizations. Its mission is to strengthen science communities in the Americas through capacity building and to provide an independent source of science policy advice to governments and the public on key challenges for the future of the region. IANAS is hosted by the Mexican Academy of Sciences.



Representatives of IAP and its regional networks engaged in the Food and Nutrition Security and Agriculture (FNSA) project at the meeting of the S20 academies in Rosario, Argentina.

IANAS is a regional network of academies of sciences with the goal of strengthening the academies and fostering cooperation between them in order to use their combined expertise to solve the complex social, economic and environmental challenges facing the region, and to make a more effective contribution to solving global challenges.

The IANAS executive meeting was hosted by the Mexican Academy of Science in Mexico City on 28-29 May 2018,



Participants at the IANAS Executive Committee meeting and the IANAS-IAP Sustainable Development Goals workshop, Mexico City, Mexico.

where the current status and future projects of the different focal groups (water, energy, women for science and science education) were discussed. In addition, on 29-30 May 2018, 17 of the 20 IANAS member academies, together with representatives of the Caribbean Academy of Sciences, the ICSU Regional Office for Latin America and the Caribbean (ROLAC), the Global Young Academy (GYA) and the policymaking community participated in a regional IAP

workshop on the Sustainable Development Goals (SDGs). The aim was to determine the current engagement of academies and their members in meeting the SDGs and how they could do so in the future.

Water

Access to clean water is one of the major problems of the 21st Century, exacerbated by an increasing human population, a long history of excessive and inappropriate use of this natural resource, as well as serious problems of pollution. One important contribution of the IANAS water group was the release of a major publication, 'Water Quality in the Americas: Risks and opportunities', on 18 March 2018, World Water Day.

Members of the IANAS Water Programme participated in four international water fora: the first was in Ipatinga, Brazil (19-20 February 2018) where the topic was 'Quality of Water: Present situation, problems and solutions in the different countries of the Americas'. At the World Water Forum in Rio



Representatives of the IANAS Water Programme at the World Water Forum, Rio de Janeiro, Brazil.

de Janeiro, Brazil (21 March 2018), they discussed the IANAS publication 'Urban Water: Challenges in the Americas' and in Panama City (15-19 October 2018) four IANAS Water Programme representatives organised and led a workshop on 'Management of Reservoirs with Eutrophication and other Sources of Contamination', sponsored by the *Universidad Tecnológica de Panama*. Finally, they organized a series of presentations from representatives from five different regions of the Americas on 'Urban Waters: Challenges and opportunities for sustainable cities – an interface where science and policy meet' followed by an interchange with the audience.

In parallel with the CILAC Forum, the IANAS Water Programme held its focal points meeting, which was hosted by the Panamanian Association for the Advancement of Sciences (APANAC) on 21-24 October 2018. The representatives from the different countries reported that, in addition to their activities associated with IANAS, they are also involved in national workshops, training sessions, symposia and planning the final steps for the publication of their country chapters in the new publication on 'Water Quality in the Americas: Risks and opportunities'.

Women for Science

The Women for Science (WfS) Programme focal points held their meeting on 27-30 August 2018 in Rio de Janeiro, Brazil, hosted by the Brazilian Academy of Sciences. They also participated in a symposium where young women scientists from Central and South America spoke about their experiences both as students and young professionals in their respective fields. Several years ago the WfS group established the 'Anneke Levelt Senger Prize' to recognise young women scientists in developing countries, and immediately after the meeting in Rio a call for nominations was sent out for the 2019 competition. In addition, an updated version of the IANAS 2017-2018 'Survey of Women Scientists in the Academies' was published.



Participants at the annual meeting of the Focal Points of the IANAS Women for Science Programme, Rio de Janeiro, Brazil.

Within their own countries the WfS focal points have conducted activities that foster a welcoming attitude towards women in science in their respective academies, encourage girls to consider careers in science, and that increase the visibility of the contributions made by women scientists.

Science Education

Science education is the most important way through which citizens of all countries learn about science, its values, concepts and objectives, and through which they

can understand the importance of the scientific endeavour for their cultural and socioeconomic development. In 2018, the meeting of IANAS' Science Education Programme focal points was hosted by National Academy of Sciences of Costa Rica from 30 August to 1 September. The different focal points outlined the activities undertaken by their member academies to advance and implement inquiry-based science education (IBSE) methodologies in their respective countries. It is clear that the challenges differ significantly between countries and so an assessment is being undertaken to determine the way in which IANAS can best contribute to this important question. One important way is to provide links to available resources that teachers can access so the focal points are considering how the website, 'Indagala' can be modified to meet this goal. All participants attended a ceremony recognising the 2018 recipient of the Prominent Women Scientists in Costa Rica, and the day after the meeting, several focal points participated in a symposium entitled '*Ciencia, Tecnología y Sociedad*'.

Energy

IANAS' Energy Programme aims to apply advanced science and engineering to sustainable energy programmes in the western hemisphere. This focal group has been going through transition and two new co-chairs have been appointed, with the mandate to work with member academies' focal points to establish the future directions of the programme.

Food and Nutrition Security

The major IANAS contribution to IAP Food and Nutrition Security and Agriculture (FNSA) project (see pages 20-21) was the publication of 'Challenges and Opportunities for Food and Nutritional Security in the Americas: The view of the academies of sciences' in November 2017. In 2018 national events involving academies and local policy makers were organised around this publication in Caracas, Venezuela (14 March 2018), Guatemala (3 May 2018), Brasilia, Brazil (4 May 2018), Trinidad and Tobago (9-10 May 2018), Mexico City (28-29 May 2018), Buenos Aires, Argentina (26 July 2018), Panama (24 October 2018) and Guasave, Mexico (6 November 2018). In addition, representatives of IANAS and the other IAP regional networks participated in a satellite workshop at the G20 academies of science meeting in Argentina (the S20), where they presented the overall findings of the project.

Inter-programme Collaborations

IANAS has been encouraging collaboration between the different working groups, as evidenced by the chapter prepared by WfS group members that was included in the IANAS publication 'Challenges and Opportunities for Food and Nutritional Security in the Americas: The view of the academies of sciences'. This year the focal points of the Energy Programme wrote a chapter entitled 'Alternative Energies Improving the Quality of Water in the Americas' that will be included in a forthcoming publication by the Water Programme on 'Water Quality in the Americas'.

For additional information on IANAS, please visit:

www.ianas.org

Twitter: @IanaSonline

Network of African Science Academies (NASAC)



The Network of African Science Academies (NASAC) is a consortium of 24 merit-based science academies in Africa and aspires to make the voice of science heard by policy and decision makers in the continent and worldwide. NASAC is dedicated to enhancing the capacity of existing national science academies and facilitating the creation of new academies in countries where none exist.



Participants at the Leading Integrated Research for Agenda (LIRA) Scientific Advisory Committee (SAC) meeting, Lilongwe, Malawi.

The Network of African Science Academies (NASAC) was established in 2001 in Nairobi, Kenya, and is currently the affiliate Network for IAP in Africa. NASAC is a consortium of 28 merit-based science academies in Africa and aspires to make the 'voice of science' heard by policy and decision makers within the continent and worldwide. NASAC is dedicated to enhancing the capacity of existing national science academies and champions the cause for creation of new academies in countries where currently none exist.

On 8-9 February, the Leading Integrated Research for Agenda 2030 for Africa (LIRA) Scientific Advisory Committee (SAC), for which NASAC serves, met in Lilongwe, Malawi, to review the progress of the programme and select projects for support in 2018. The SAC members also discussed and defined the programme's scientific strategy, reviewed the proposals submitted to the third LIRA call on Advancing the Implementation of Sustainable Development Goal 11 on Cities in Africa, and awarded 11 grants to researchers from seven African countries.

NASAC participated in the fourth session of the African Regional Forum on Sustainable Development (ARFSD) held in

Dakar, Senegal, on 2-4 May. The meeting provided a platform for peer-learning and sharing experiences about good practices and lessons learned to accelerate implementation of the UN's 2030 Agenda for Sustainable Development and the African Union Agenda 2063. Participants also deliberated and agreed on the priorities and recommendations of Africa in the form of key messages as the region's collective input to the 2018 United Nations High Level Political Forum session in New York.

On 6-9 May, NASAC joined the International Science Council's Regional Office for Africa (ISC ROA) in Port Elizabeth, South Africa, to attend its Project Coaching Workshop. NASAC made the most of this event tackling a wide range of topics, such as theories, methods and examples of trans-disciplinary research; stakeholder engagement; theories of change; development of project plans; publishing trans-disciplinary research; and financial management.

NASAC also participated in the International Forum on Science Education (9 April, Islamabad, Pakistan). The forum was organized by the Economic Cooperation Organization Science Foundation in collaboration with the Higher



Participants at the NASAC-German National Academy of Sciences, Leopoldina evaluation meeting, Halle, Germany.

Education Commission of Pakistan, the Pakistan Academy of Sciences and the InterAcademy Partnership Science Education Programme (IAP SEP – see pages 16-17). The forum provided a platform to discuss ways of supporting science while making sure it meets society's expectations.

Women and Sustainable Development

NASAC co-organised the Forum for Women and Sustainable Development in Africa (WSDA), held in Dar es Salaam, Tanzania, on 8-10 March. The Forum brought together 170 male and female academicians, scientists and experts interested in sustainable development issues and the role of women in the realization of the Sustainable Development Goals in Africa. The forum, whose participants were drawn from 24 countries, has since published the proceedings of the event (see also pages 50-52).

IAP Projects

On 12-14 February, representatives from NASAC and the other IAP Regional Networks (AASSA, IANAS and EASAC) met in Halle, Germany, to share updates about the publication and dissemination of the four regional 'Food and Nutrition Security and Agriculture' (FNSA) reports (see pages 20-21). They also reviewed the draft version of the global FNSA report and agreed on its main conclusions and recommendations.

On 17-18 September NASAC, IAP and the German Ministry for Education and Research (BMBF) through the German National Academy of Sciences, Leopoldina, hosted a

Scientific Conference and Ministerial Roundtable on the Opportunities and Challenges for Research in Food and Nutrition Security and Agriculture (FNSA). The event provided an opportunity to showcase the findings of the Africa report if the IAP FNSA project.

Shortly after, on 19-20 September, NASAC participated in the IAP-Carnegie project's Africa workshop on 'Improving scientific input to global policymaking, with a focus on the UN Sustainable Development Goals' (see pages 18-19), an event organised in Nairobi, Kenya, to help academies better understand the SDGs and work towards achieving them. The event was attended by delegations from academies from 16 different countries: Benin, Botswana, Cameroon, Cot d'Ivoire, Ethiopia, Ghana, Kenya, Mauritius, Morocco, Nigeria, Senegal, South Africa, Sudan, Tanzania, Uganda, and Zambia.



The launch of the NASAC-Food and Nutrition Security and Agriculture (FNSA) Report.

Phase 3 of the LIRA programme's transdisciplinary research training took place on 2-7 September in Abidjan, Cote d'Ivoire. The training strengthened the capacity of 35 researchers to undertake transdisciplinary research and taught them how to lay the foundations of inter- and trans-disciplinary projects. It also helped the researchers to develop full proposals and strengthened their science communication skills.

Meeting of African Academies

On 11-13 November, NASAC joined the fourteenth Annual Meeting of African Science Academies (AMASA 14), hosted by the Benin National Academy of Sciences, Arts and Letters (ANSALB) in Cotonou, Benin. The main theme of the conference was 'Sustainable Development in Africa: The role of young and senior science academies', and it highlighted not only the role of science academies as instruments for development, but also how traditional knowledge, science diplomacy and education can support the implementation of the SDGs. The panel discussion 'Sharing learning from IAP projects on global (UN SDGs) and regional (AU-STISA) policymaking' put the spotlight on IAP's approach to policy- and decision-making. The event drew more than 120 participants from more than 20 African countries, from academies in the United States of America (US National

Academies of Sciences, Engineering and Medicine), the United Kingdom (Royal Society), France (*Académie des sciences*), and from African national young academies (NYAs). Subsequently, on 14 November, the NASAC annual General Assembly was also held in Cotonou.

In 2018 NASAC awarded capacity building grants to academies in Botswana (BAS), South Africa (ASSAf) and Uganda (UNAS), and an IAP grant to ASSAf resulted in the establishment of the Kingdom of Eswatini Academy of Sciences (KEAS) on 27 November.

For additional information, see:

www.nasaconline.org

Twitter: @NASAConlineOrg



Participants at the NASAC-IAP Policy and German National Academy of Sciences, Leopoldina, workshop, Nairobi, Kenya.

The background of the page features a close-up photograph of a hand holding a large, textured leaf. The hand is positioned at the top, with fingers gripping the leaf's stem. The leaf is a vibrant green color and shows a prominent network of veins. A horizontal dotted line is drawn across the middle of the image, passing behind the text.

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Members of the InterAcademy Partnership

(as of December 2018)

1.	Afghanistan Academy of Sciences
2.	Albanian Academy of Sciences
3.	<i>Academia Nacional de Ciencias Exactas, Fisicas y Naturales de la Republica Argentina</i>
4.	<i>Academia Nacional de Medicina de Buenos Aires</i>
5.	National Academy of Sciences of Armenia
6.	Academy of Medical Sciences of Armenia
7.	Australian Academy of Science
8.	Austrian Academy of Sciences
9.	Bangladesh Academy of Sciences
10.	National Academy of Sciences of Belarus
11.	Royal Academies for Science and the Arts of Belgium
12.	Belgian Royal Academy of Medicine
13.	Benin National Academy of Sciences and Arts
14.	<i>Academia Nacional de Ciencias de Bolivia</i>
15.	<i>Academia Boliviana de Medicina</i>
16.	Academy of Sciences and Arts of Bosnia and Herzegovina
17.	Brazilian Academy of Sciences
18.	<i>Academia Nacional de Medicina, Brazil</i>
19.	Bulgarian Academy of Sciences
20.	National Academy of Sciences Burkina Faso
21.	Cameroon Academy of Sciences
22.	Royal Society of Canada
23.	Canadian Academy of Health Sciences
24.	<i>Academia Chilena de Ciencias</i>
25.	<i>Academia Chilena de Medicina</i>
26.	Chinese Academy of Sciences
27.	Chinese Academy of Engineering
28.	<i>Academia Sinica, Taiwan, China</i>
29.	Colombian Academy of Exact, Physical & Natural Sciences
30.	<i>Academia Nacional de Medicina de Colombia</i>
31.	Croatian Academy of Arts and Sciences
32.	Croatian Academy of Medical Sciences
33.	Cuban Academy of Sciences
34.	Czech Academy of Sciences
35.	Royal Danish Academy of Sciences and Letters

36.	<i>Academia de Ciencias de la Republica Dominicana</i>
37.	Academy of Sciences of Ecuador
38.	Academy of Scientific Research and Technology, Egypt
39.	Estonian Academy of Sciences
40.	Ethiopian Academy of Sciences
41.	Council of Finnish Academies
42.	<i>Académie des Sciences, Institut de France</i>
43.	<i>Académie Nationale de Médecine, France</i>
44.	<i>Académie des Technologies, France</i>
45.	Georgian National Academy of Sciences
46.	Georgian Academy of Medical Sciences
47.	Union of German Academies of Sciences and Humanities
48.	German National Academy of Sciences, Leopoldina
49.	Ghana Academy of Arts and Sciences
50.	Academy of Athens, Greece
51.	<i>Academia de Ciencias Medicas, Fisicas y Naturales de Guatemala</i>
52.	National Academy of Sciences of Honduras
53.	Hungarian Academy of Sciences
54.	Indian National Science Academy
55.	National Academy of Medical Sciences, India
56.	Indonesian Academy of Sciences
57.	Academy of Sciences of the Islamic Republic of Iran
58.	Iranian Academy of Medical Sciences
59.	Royal Irish Academy
60.	Israel Academy of Sciences and Humanities
61.	<i>Accademia Nazionale dei Lincei, Italy</i>
62.	<i>Accademia Nazionale di Medicina, Italy</i>
63.	Science Council of Japan
64.	Royal Scientific Society of Jordan
65.	National Academy of Sciences of the Republic of Kazakhstan
66.	Kenya National Academy of Sciences
67.	Korean Academy of Science and Technology
68.	National Academy of Sciences, Republic of Korea
69.	Kosova Academy of Sciences and Arts

70.	National Academy of Sciences of the Kyrgyz Republic
71.	Latvian Academy of Sciences
72.	Lebanese Academy of Sciences
73.	Lithuanian Academy of Sciences
74.	Macedonian Academy of Sciences and Arts
75.	Madagascar's National Academy of Arts, Letters and Sciences
76.	Academy of Sciences Malaysia
77.	Mauritius Academy of Science and Technology
78.	Mexican Academy of Sciences
79.	National Academy of Medicine of Mexico
80.	Academy of Sciences of Moldova
81.	Mongolian Academy of Sciences
82.	Montenegrin Academy of Sciences and Arts
83.	Hassan II Academy of Science and Technology, Morocco
84.	Academy of Science of Mozambique
85.	Nepal Academy of Science and Technology
86.	Royal Netherlands Academy of Arts and Sciences
87.	Royal Society of New Zealand
88.	Nicaraguan Academy of Sciences
89.	Nigerian Academy of Science
90.	Norwegian Academy of Sciences and Letters
91.	Pakistan Academy of Sciences
92.	Palestine Academy for Science and Technology
93.	<i>Academia Nacional de Ciencias del Peru</i>
94.	National Academy of Science and Technology, Philippines
95.	Polish Academy of Sciences
96.	<i>Academia das Ciencias de Lisboa, Portugal</i>
97.	Romanian Academy
98.	Academy of Medical Sciences of Romania
99.	Russian Academy of Medical Sciences
100.	Russian Academy of Sciences
101.	<i>Académie des Sciences et Techniques du Sénégal</i>
102.	Serbian Academy of Sciences and Arts
103.	Singapore National Academy of Sciences
104.	Slovak Academy of Sciences

105.	Slovenian Academy of Sciences and Arts
106.	Academy of Science of South Africa
107.	<i>Real Academia de Ciencias Exactas, Fisicas y Naturales, Spain</i>
108.	National Academy of Sciences, Sri Lanka
109.	Sudanese National Academy of Sciences
110.	Royal Swedish Academy of Sciences
111.	Swiss Academies of Arts and Sciences
112.	Swiss Academy of Medical Sciences
113.	Academy of Sciences of the Republic of Tajikistan
114.	Tanzania Academy of Sciences
115.	Thai Academy of Science and Technology
116.	Turkish Academy of Sciences
117.	Uganda National Academy of Sciences
118.	National Academy of Sciences of Ukraine
119.	Academy of Medical Sciences, UK
120.	Royal Society , UK
121.	US National Academy of Sciences
122.	US National Academy of Medicine
123.	National Academy of Sciences of Uruguay
124.	Uzbekistan Academy of Sciences
125.	<i>Pontificia Academia Scientiarvm, Vatican</i>
126.	<i>Academia de Ciencias Fisicas, Matematicas y Naturales de Venezuela</i>
127.	<i>Academia Nacional de Medicina de Venezuela</i>
128.	Zambia Academy of Sciences
129.	Zimbabwe Academy of Sciences
130.	African Academy of Sciences
131.	Caribbean Academy of Sciences
132.	European Academy of Sciences and Arts
133.	Islamic World Academy of Sciences
134.	Latin American Academy of Sciences
135.	TWAS, The World Academy of Sciences
136.	World Academy of Art and Science

IAP Science and IAP Health Financial Summary, 2018

The total amount of funds received for activities in 2018 was USD 977,356. With USD 1,042,715 brought forward from the previous year and USD 50,000 transferred to a reserve fund, this meant an operating budget of USD 1,970,071.

The main contribution was from the Italian Ministry of Foreign Affairs (USD 761,575). Additional contributions were received from the Korean Academy of Science and Technology (KAST) and the Turkish Academy of Sciences (TUBA). A major contribution of USD 172,000 was received from the Tides Foundation (USA) to support the IAP Young Physician Leaders (YPL) programme for the coming three years (see pages 22-23).

In addition, it is estimated that member academies and regional affiliated networks contributed more than USD 1,000,000 by leveraging funds for activities from other donors, and through in-kind support for the organization and hosting of conferences and workshops, travel support for their representatives to IAP and other events, the publication of reports, as well as the provision of staff time.

In 2018, special mention should be made of the Pakistan Academy of Sciences, for hosting the IAP Science Education Programme's Global Council and policy forum in April. Other members of the IAP Science Education Programme's Global Council, including the Academy of Sciences Malaysia, also made or leveraged significant in-kind contributions for various events (see page 47). Thanks are also due to the National Academy of Science and Technology, the Philippines, for supporting the IAP Health Executive Committee meeting in Manila in May alongside a planning event for a planetary health initiative, and to the Swiss Academies of Arts and Sciences who hosted the Joint Meeting of IAP leadership in Bern, Switzerland, in September 2018.

IAP Health activities leveraged additional funding from the UK Academy of Medical Sciences, the World Health Summit Foundation GmbH and the Bayer Science and Education Foundation.

IAP Science Financial Report for 2018 (in USD)

INCOME ¹	2018
Balance brought forward 01.01.2018	1.042.715,10
Ministry of Foreign Affairs, Italy	761.575,78
Tides, USA	172.000,00
WHS Foundation GmbH, Germany	12.093,70
KAST, Republic of Korea	4.980,00
Turkish Academy of Sciences	2.000,00
Transfer to Reserve Fund	-50.000,00
Interest	24.707,00
TOTAL INCOME	1.970.071,58

¹ All contributions are expressed in US dollars and have been converted using the UN official rate of exchange in effect at the time the contributions were received.

EXPENDITURE	2018	
	APPROVED BUDGET	SPENT
1) Scientific Projects		
1.1) New Projects	375.000,00	159.000,00
1.2) Regional Network Programmes	440.000,00	440.000,00
1.3) Policy collaboration with IAP Policy	40.000,00	40.000,00
1.4) Fundraising for new activities	135.000,00	16.817,18
<i>Sub-Total for (1)</i>	990.000,00	655.817,18
2) Meetings and Conferences		
2.1) Executive Committee Meetings/GA Conference/Travels	100.000,00	53.433,48
2.2) Conference for Young Scientists	20.000,00	11.415,23
2.3) Young Physician Leaders	107.000,00	42.517,89
<i>Sub-Total for (2)</i>	227.000,00	107.366,60
3) Publications (inc. Website)		
3.1) Website	7.500,00	2.656,31
3.2) Other publications (inc. Annual Report)	15.000,00	8.654,50
<i>Sub-Total for (3)</i>	22.500,00	11.310,81
4) Operational Expenses		
4.1) Staff Costs	510.000,00	367.298,87
4.2) Staff travels	10.000,00	9.967,47
4.3) Communications	20.000,00	3.738,32
4.4) Office and Other Supplies	15.000,00	2.070,43
4.5) ICTP services	15.000,00	13.500,00
<i>Sub-Total for (4)</i>	570.000,00	396.575,09
<i>Management Costs</i>		51.160,14
Total	1.809.500,00	1.222.229,82
Savings on prior years' obligations		52.984,14
Excess (Shortfall) of income over expenditure		800.825,90
Reserve Fund²		
Amount available at the beginning of the period		127.301,51
Transfer from IAP account		50.000,00
End of service entitlements		0,00
Reserve Fund balance end of period		177.301,51

² The purpose of the Reserve Fund is to cover the end of service entitlements of IAP staff.

IAP Policy Financial Summary, 2018

The total amount of funds received by IAP Policy in 2018 was USD 1,436,625. Income came from the US National Academies of Sciences, Engineering and Medicine (NASEM) as host of the IAP Policy secretariat, the Carnegie Corporation of New York through the Institute for Advanced Study to support the projects 'Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals', and 'Harnessing Science, Engineering, and Medicine to Address Africa's Challenges,' IAP Science's contribution for the costs of the InterAcademy Partnership website, and IAP Policy indirect charges. A small amount came from royalties earned on the book, 'Doing Global Science: A guide to responsible conduct in the global research enterprise'.

Professional fees increased this year as a result of hiring an accounting firm, Marcum LLP, to manage IAP Policy's finances and an increase in legal counsel fees. Administration fees also increased as IAP Policy is subject to NASEM-assessed administration charges (administration charges were not assessed by NASEM prior to October 2017).

IAP Policy Financial Report for 2018 (in USD)¹

INCOME	
US NASEM contribution	\$246,212
Projects and administration	\$1,189,748
Book royalties	\$665
Total income	\$1,436,625

EXPENDITURES	
Project Expenses	\$660,107
Operational Expenses:	
Staff salaries	\$105,180
Website and public information	\$46,000
Non-project travel	(\$3,302) ²
Professional fees	\$40,757
Miscellaneous	\$9,370
Administration	\$131,760
Total Expenditure	\$989,872
Excess (shortfall) of income over expenditure	\$446,753

¹ Sources for report include: Marcum LLP and NASEM finance staff..

² Includes voided travel payment to be paid in 2019.

Member contributions

direct financial contributions and in-kind support

Pledges to the IAP fundraising campaign initiated in 2013

Council of Finnish Academies
 Union of German Academies of Sciences and Humanities
Deutsche Akademie der Naturforscher Leopoldina
 Academy of Athens, Greece
 Hassan II Academy of Science and Technology, Morocco
 Royal Society, UK
 US National Academy of Sciences (NAS)
Academia Nacional de Ciencias del Uruguay

Voluntary Membership Contributions (since 2013)

Australian Academy of Science
 Bangladesh Academy of Sciences
 Georgian National Academy of Sciences (GAS)
 Israel Academy of Sciences and Humanities
 Korean Academy of Science and Technology (KAST)
 National Academy of Science and Technology, Korea (NAST)
 Academy of Medical Sciences of Romania
Académie National des Sciences et Techniques du Senegal
 Turkish Academy of Sciences (TÜBA)
 Uganda National Academy of Sciences (UNAS)

Project support

IAP projects are also being implemented by various partners. The German National Science Academy, Leopoldina, for example, is holding funds from the German Federal Ministry of Education and Research for the IAP Food Nutrition and Security and Agriculture (FNSEA) project (see pages 20-21), as well as for a one-year project that is reviewing the use and impact of neonicotinoid insecticides in Africa.

The Institute for Advanced Study (IAS) provided project support and served as a fiscal sponsor for the IAP Carnegie Corporation of New York-funded projects.

In-kind support

IAP would like to thank its many member academies that have contributed to its fundraising campaign, have provided voluntary membership contributions, or that have provided in-kind support. Without this buy-in from the members, IAP activities would have much less visibility and impact around the globe.



Standing Committees

InterAcademy Partnership Steering Committee

- Volker ter Meulen*, Germany (Co-chair IAP Science)
- Krishan Lal, India (Co-chair IAP Science)
- Depei Liu*, China (Co-chair IAP Health)
- Detlev Ganten, Germany (Co-chair IAP Health)
- Richard Catlow, UK (Co-chair IAP Policy)
- Daya Reddy, South Africa (Co-chair IAP Policy)

* Depei Liu and Volker ter Meulen are the current Presidents of the InterAcademy Partnership

In addition to the Steering Committee members, the following individuals, representing the IAP regional networks, make up the **InterAcademy Partnership Board**

Yoo Hang Kim, South Korea (Association of Academies and Societies of Sciences in Asia, AASSA)

Thierry Courvoisier, Switzerland (European Academies Science Advisory Council, EASAC)

Juan Asenjo, Chile (Inter-American Network of Academies of Science, IANAS)

Mostapha Bousmina, Morocco (Network of African Science Academies, NASAC)

IAP Science Executive Committee

- Krishan Lal, India (Co-chair)
- Volker ter Meule, Germany (Co-chair)
- African Academy of Sciences, Felix Dapare Dakora
- Australian Academy of Science, Cheryl Praeger
- Brazilian Academy of Sciences, Luiz Davidovich
- Royal Society of Canada, Jeremy McNeil
- *Academia Chilena de Ciencias*, Juan Asenjo
- Cuban Academy of Sciences, Sergio Pastrana
- Academy of the Islamic Republic of Iran, Reza Shams Ardekani
- Science Council of Japan, Takashi Onishi
- Korean Academy of Science and Technology, Myung Chul Lee
- Academy of Science of South Africa, Daya Reddy
- Royal Society, UK, Richard Catlow

Ex-officio member:

The World Academy of Sciences (TWAS)

IAP Health Executive Committee

- Detlev Ganten, Germany (Co-chair)
- Depei Liu, China (Co-chair)
- *Academia Nacional de Medicina* (Argentina), Jorge Alberto Neira
- *Accademia Nazionale dei Lincei* (Italy), Mario Stefanini
- Academy of Sciences Malaysia, Lai-Meng Looi
- Hassan II Academy of Science & Technology (Morocco), Rajae El Aouad
- National Academy of Science and Technology (Philippines), Carmencita D. Padilla
- Academy of Science of South Africa, Karen Hoffman
- Swiss Academy of Medical Sciences, Thomas Zeltner
- Academy of Medical Sciences (UK), George Griffin
- US National Academy of Medicine, Margaret Hamburg

Ex-officio member:

The World Academy of Sciences (TWAS)

IAP Policy Board

- Richard Catlow, United Kingdom (Co-chair)
- Daya Reddy, South Africa (Co-chair)
- African Academy of Sciences, Felix Dapare Dakora
- Australian Academy of Science, Andrew Holmes
- Brazilian Academy of Sciences, Luiz Davidovich
- Chinese Academy of Sciences, Tao Zhang
- *Académie des Sciences* (France), Sébastien Candel
- German National Academy of Sciences Leopoldina, Jörg Hacker
- Indian National Science Academy, Ajay K Sood
- *Accademia dei Lincei* (Italy), Alberto Quadrio Curzio
- Science Council of Japan, Juichi Yamagiwa
- Royal Scientific Society of Jordan, HRH Princess Samaya Bint El Hassan
- Mexican Academy of Sciences, Jose Luis Moran Lopez
- Royal Netherlands Academy of Arts and Sciences, José van Dijck
- Nigerian Academy of Science, Mosto Onuoha
- National Academy of Sciences, Sri Lanka, Azeez Mubarak
- The World Academy of Sciences (TWAS), Bai Chunli

Ex-officio members:

IAP Health

IAP Science

International Council of Academies of Engineering and Technological Sciences (CAETS)

Science for Poverty Eradication Committee

- Luiz Davidovich, Brazilian Academy of Sciences (Chair)
- Lai Meng Looi, IAP Health
- Aya Abe, AASSA
- Aishah Bidin, AASSA
- Richard Catlow, EASAC
- Peter Fritz, EASAC
- Ricardo Paes de Barros, IANAS
- Judith Teichman, IANAS
- Yousuf Maudarbocus, NASAC
- Ratemo Michieka, NASAC
- Robert Lepenies, Global Young Academy

Science Education Programme (SEP) Global Council

- Mustafa El Tayeb, Sudan (Chair)
- Carol O' Donnell (USA)
- Manzoor H. Soomro (Pakistan)
- Aphiya Hathayatham (Thailand)
- R. Indarjani (Indonesia)
- Carlos Bosch (Mexico)
- Lena Kjellén (Sweden)
- Daniel Rouan (France)
- Lazzat Kussainova (Kazakhstan)
- Hounkonnou M. N. (Benin)
- Jiang Jingyi (China)
- Edgar Gonzalez (Colombia)

Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals*

Working Group Members

- Eva Alisic, Australia (Co-chair)
- Jinghai Li, China (Co-chair)
- Michael Barber, Australia
- Peter Fritz, Germany
- Norichika Kanie, Japan
- Muhammad Saidam, Jordan
- Francisco José Sánchez-Sesma, Mexico
- Rajae El Aouad, Morocco
- Robert Scholes, South Africa
- Keto E. Mshigeni, Tanzania
- Sandy Harrison, United Kingdom

Harnessing Science, Engineering and Medicine to Address Africa's Challenges*

Working Group Members

- Robin Crewe, South Africa (Co-chair)
- Oyewale Tomori, Nigeria (Co-chair)
- T.J. Higgins, Australia
- Norbert Hounkonnou, Benin
- Sameh Soror, Egypt
- Odile Macchi, France
- Peter Fritz, Germany
- Eric Odada, Kenya
- Rajaâ Cherkaoui El Moursli, Morocco
- Himla Soodyall, South Africa
- Guéladio Cissé, Switzerland
- Keto E. Mshigeni, Tanzania
- Richard Catlow, UK
- Cato Laurencin, USA

* Both projects are supported by a secretariat led by Tracey Elliott, Project Director, together with Teresa Stoepler (Executive Director, IAP Policy, US NASEM), Nina Ward (Research Associate, US NASEM) and Arlen Hastings (Director of External Projects, Institute for Advanced Study, Princeton).

For additional information, contact:

projects@iapartnership.org

Meetings supported in 2018

February

- London, UK, IAP Research Board Meeting, 8 February 2018¹
- Lilongwe, Malawi, NASAC participation in the Leading Integrated Research for Agenda 2030 for Africa (LIRA) Scientific Advisory Committee (SAC) meeting, 8-9 February 2018¹
- Ipatinga, Brazil, IANAS Water Programme participation in the symposium '*Compartilhando Aguas: Do Local ao Global*', 19-20 February 2018³

March

- Geneva, Switzerland, UNECE Regional Forum on Sustainable Development, 1-2 March 2018³
- Brussels, Belgium, launch of the EASAC report on 'Negative Emission Technologies', 8 March 2018¹
- Dar es Salaam, Tanzania, NASAC co-organisation of the 'Forum for Women and Sustainable Development in Africa' (WSDA), 8-10 March 2018¹
- Caracas, Venezuela, FNSA-Food and Nutritional Security in Venezuela. The Agrifood Abduction of a Country: Vision and commitment (supported by the Academy of Physical, Mathematical and Natural Sciences of Venezuela), 14 March 2018¹
- Rio de Janeiro, Brazil, IANAS Water Programme participation in the World Water Forum, 21 March 2018³
- Amsterdam, the Netherlands, European National Young Academies meeting, 23-24 March 2018²
- Kigali, Rwanda, Pre-Next Einstein Forum workshop on science leadership, 25 March 2018¹
- Bangkok, Thailand, UN Economic and Social Commission for Asia and the Pacific, side event on 'Empowering scientists in the Asia-Pacific region to support the SDGs', 28-30 March 2018³

April

- Islamabad, Pakistan, the International Forum on Science Education 'Quality Science – Education at Schools: A must for quality higher education and economic development', 9 April 2018¹
- Coimbra, Portugal, IAP Health 2018 Regional Young Physician Leaders Programme, 17-18 April 2018¹
- Santiago, Chile, UN Economic Commission for Latin America and the Caribbean, 18-20 April 2018³
- Alexandria, Egypt, BioVision Alexandria, 20-22 April 2018²
- Beirut, Lebanon, UN Economic and Social Commission for West Asia (UNESCWA) Arab Forum for Sustainable Development, 24-26 April 2018²
- Brussels, Belgium, Public launch EASAC-IAP report on Food Security in Europe, 26 April 2018¹

May

- Dakar, Senegal, UN Economic Commission for Africa's (UNECA) Regional Forum for Sustainable Development, 2-4 May 2018³
- Guatemala City, Guatemala, FNSA-Guatemala (supported by the Academy of Medical, Physical and Natural Sciences of Guatemala), 3 May 2018¹
- Brasilia Brazil, FNSA seminar to present the book 'Challenges and Opportunities for Food and Nutrition Security in the Americas: The view from the academies of sciences', organized by Embrapa's headquarters in Brasilia (supported by the Brazilian Academy of Sciences), 4 May 2018¹
- Kuala Lumpur, Malaysia, International conference on Climate Change Education, 7-9 May 2018¹
- Pattaya, Thailand, 8th International Conference of Young Scientists and Global Young Academy Annual General Meeting, 7-11 May 2018¹
- St Augustine, Trinidad and Tobago, National Symposium on Food and Nutrition Security, FNSA-Caribbean (supported by the Caribbean Academies of Sciences), 9-10 May 2018¹

- Kuala Lumpur, Malaysia, International training workshop on Climate Change Education, 9-11 May 2018¹
- Mexico City, Mexico, IANAS Executive Committee meeting, 28-29 May 2018¹
- Mexico City, Mexico, IAP and IANAS Regional Workshop on the SDGs, 29-30 May 2018¹

June

- New York, USA, UN STI Multistakeholder Forum, 5-6 June 2018³
- Zagreb, Croatia, Governance of Dual Use Research in the Life Sciences: An International Workshop, 11-13 June 2018¹

July

- Toulouse, France, EuroScience Open Forum 2018 (ESOF), 9-14 July 2018³
- Rosario, Argentina, FNSA at the S20-G20, 24-25 July 2018¹
- Buenos Aires, Argentina, *Consejo Argentino para las Relaciones Internacionales* (CARI), organized by CARI and National Academy of Exact, Physical and Natural Sciences of Argentina (ANCEFAN), 26 July 2018¹

August

- Jakarta, Indonesia, AASSA regional workshop 'SHARE Communication: The importance of media to engage research and development with public understanding', 6-7 August 2018¹
- Geneva, Switzerland, side-event on 'Assessing Security and Governance Issues of Modern Biotechnology: Updates from Academies of Science' at the Meeting of Experts (MXP2) of the Biological and Toxin Weapons Convention, 7-16 August 2018³
- Kuala Lumpur, Malaysia, IAP and AASSA Regional Workshop on the SDGs, 13-14 August 2018¹

- Kuala Lumpur, Malaysia, AASSA-Malaysian Academy of Sciences (ASM) regional workshop on 'Water-Borne Diseases', 15-16 August 2018¹
- Muang Thong Thani, Thailand, Exclusive Forum on Promoting Science Literacy through the National Museums of ASEAN Countries, 25- 26 August 2018¹
- Rio de Janeiro, Brazil, IANAS Women for Science (WfS) Programme focal points meeting hosted by the Brazilian Academy of Sciences, 27-30 August 2018¹
- San Jose, Costa Rica, IANAS Science Education programme focal points meeting and Congress for Science Teachers hosted by the National Academy of Sciences of Costa Rica, 29-30 August 2018¹

September

- Abidjan, Cote d'Ivoire, NASAC participation in phase 3 of the LIRA programme's transdisciplinary research training, 2-7 September 2018¹
- Bern, Switzerland, Global Policymaking for the SDGs Final Working Group Meeting, 3-4 September 2018¹
- Bern, Switzerland, IAP Health and Science EC-Meeting, 5-6 September 2018¹
- Halle, Germany, IAP and EASAC Regional Workshop on the SDGs, 10-12 September 2018¹
- Dhaka, Bangladesh, AASSA-Bangladesh Academy of Sciences (BAS) regional workshop on 'Promotion of Excellence in Science Education and Research', 12-13 September 2018¹
- Nairobi, Kenya, Scientific Conference and Ministerial Roundtable on the Opportunities and Challenges for Research in Food and Nutrition Security and Agriculture, 17-18 September 2018¹
- Nairobi, Kenya, IAP and NASAC Regional Workshop on the SDGs and STISA, 19-20 September 2018¹
- Brussels, Belgium, Launch of the EASAC policy report on 'Opportunities for soil sustainability in Europe', 26 September 2018¹
- Fukuoka, Japan, World Social Sciences Forum, 25-28 September 2018³



October

- Birobidzhan, Russian Federation, AASSA-Far Eastern Branch of the Russian Academy of Sciences (FEB RAS) international workshop on 'Climate Change Adaptation and Mitigation: Sustainable Agriculture and Health Security', 2-3 October 2018¹
- Trieste, Italy, CESAME workshop at the Abdus Salam International Centre for Theoretical Physics (ICTP), 1-6 October 2018¹
- Bujumbura, Burundi, workshop on 'Using Science, Technology and Innovation to improve nutrition and promote sustainable agriculture to achieve food security, 16 October 2018¹
- Berlin, Germany, IAP Health 8th Young Physician Leaders Programme, 12-16 October 2018¹
- Berlin, Germany, 10th World Health Summit, 14-16 October 2018¹
- Panama City, Panama, IANAS workshop on 'Management of Reservoirs with Eutrophication and other Sources of Contamination', 15-19 October 2018¹
- Panama City, Panama, CILAC Open Science Forum for Latin America and the Caribbean and young scientists pre-CILAC leadership workshop, 20-24 October 2018^{1/3}
- Mumbai, India, 19th IUFoST World Congress of Food Science & Technology, 23-27 October 2018¹
- Bangkok, Thailand, AASSA international workshop on 'Promoting the role of Scientists and Media in Science and Health Communication: From policy to practice', 29-30 October 2018¹

November

- Guasave, Mexico, International Symposium BIOTECSIN, 6 November 2018¹
- Cotonou, Benin, 14th Annual Meeting of African Science Academies (AMASA-14), 12-14 November 2018^{1/3}
- Cotonou, Benin, NASAC annual General Assembly, 14 November 2018¹
- Cotonou, Benin, Harnessing SEM in Africa Final Working Group Meeting, 15-16 November 2018¹

December

- Geneva, Switzerland, side event on 'Governance of Dual Use Research in the Life Sciences: Advancing Global Consensus on Research Oversight' presented at the Meeting of States Parties of Biological Weapons Convention, 4-7 December 2018²
- Pretoria, South Africa, Science Forum South Africa, 12-14 December 2018²

¹ key IAP of regional network meeting

² speakers provided by IAP

³ IAP-organised session or side event

Publications supported by IAP in 2018

- **IAP Annual Report 2017**
Published by: IAP
URL: <http://www.interacademies.org/47264/IAP-Annual-Report-2017>
- **Opportunities for future research and innovation on food and nutrition security and agriculture: The InterAcademy Partnership's global perspective**
Published by: IAP
URL: <http://www.interacademies.org/48898/Opportunities-for-future-research-and-innovation-on-food-and-nutrition-security-and-agriculture-The-InterAcademy-Partnerships-global-perspective>
- **IAP S20 Statement on Food and Nutrition Security and Agriculture**
Published by: IAP
URL: <http://www.interacademies.org/47026/IAP-S20-Statement-on-Food-and-Nutrition-Security-and-Agriculture>
- **Building Scientific Capacity in Africa**
Published by: The World Academy of Sciences (TWAS) – for the advancement of science in developing countries, ICTP, ICGEB, Organization for Women in Science for the Developing World (OWSD), IAP Science
URL: <http://www.interacademies.org/44155/Building-Scientific-Capacity-in-Africa>
- **IAP Health - A call for action to tackle the growing burden of dementia**
Published by: IAP Health
URL: <http://www.interacademies.org/45731/IAP-for-Health-A-call-for-action-to-tackle-the-growing-burden-of-dementia>
- **Challenges and priorities for global mental health research in low- and middle-income countries**
Published by: UK Academy of Medical Sciences and IAP
URL: <http://www.interacademies.org/48864/Challenges-and-priorities-for-global-mental-health-research-in-low-and-middle-income-countries>
- **Governance of Dual Use Research in the Life Sciences**
Published by: US NASEM in cooperation with IAP, the Croatian Academy of Sciences and Arts, and the Croatian Society for Biosafety and Biosecurity
URL: <http://www.interacademies.org/49130/Governance-of-Dual-Use-Research-in-the-Life-Sciences>
- **IAP SEP Islamabad Declaration 2018**
Published by: IAP Science Education Programme
URL: <http://www.interacademies.org/45938/IAP-SEP-Islamabad-Declaration-2018>
- **Mosquito! Community Research Guide - Spanish**
Published by: Smithsonian Science Education Center in collaboration with IAP
URL: <http://www.interacademies.org/47241/Mosquito-Community-Research-Guide-Spanish>
- **Mosquito! Community Research Guide - English**
Published by: Smithsonian Science Education Center in collaboration with IAP
URL: <http://www.interacademies.org/47237/Mosquito-Community-Research-Guide-English>
- **Profiles of Women Scientists in Asia**
Published by: AASSA and IAP
URL: <http://www.interacademies.org/49319/Profiles-of-Women-Scientists-in-Asia>
- **Opportunities and challenges for research on food and nutrition security and agriculture in Asia**
Published by: AASSA
URL: <http://www.interacademies.org/45193/Opportunities-and-challenges-for-research-on-food-and-nutrition-security-and-agriculture-in-Asia>
- **Negative emission technologies: What role in meeting Paris Agreement targets?**
Published by: EASAC
URL: <http://www.interacademies.org/43811/Negative-emission-technologies-What-role-in-meeting-Paris-Agreement-targets>
- **Extreme weather events in Europe**
Published by: EASAC
URL: <http://www.interacademies.org/45335/Extreme-weather-events-in-Europe>
- **Opportunities for soil sustainability in Europe**
Published by: EASAC
URL: <http://www.interacademies.org/47678/Opportunities-for-soil-sustainability-in-Europe>
- **Opportunities and challenges for research on food and nutrition security and agriculture in the Americas**
Published by: IANAS
URL: <http://www.interacademies.org/45198/Opportunities-and-challenges-for-research-on-food-and-nutrition-security-and-agriculture-in-the-Americas>
- **Urban Water Challenges in the Americas: summary**
Published by: IANAS
URL: <http://www.interacademies.org/46701/Urban-Water-Challenges-in-the-Americas-summary>

- **Women for Science: Census Update 2014-2016**
Published by: IANAS
URL: <http://www.interacademies.org/46707/Women-for-Science-Census-Update-20142016>
- **Establishing a New-Vaccine Intelligence Unit in Ethiopia: Systematic Review and Policy Brief**
Published by: the Ethiopian Academy of Sciences (with financial support from IAP)
- **Opportunities and challenges for research on food and nutrition security and agriculture in Africa**
Published by: NASAC
URL: <http://www.interacademies.org/46046/Opportunities-and-challenges-for-research-on-food-and-nutrition-security-and-agriculture-in-Africa>
- **Education Systems in Eastern Africa: Creating 'Trainable' Graduates for Development: A Forum on the Nexus of the Arts, Sciences, and Humanities (NASH) Consensus Study Report**
Published by: the Uganda National Academy of Sciences, the Kenya National Academy of Sciences, the Tanzania Academy of Sciences and the Ethiopian Academy of Science (with financial support from IAP)

Secretariat

The InterAcademy Partnership secretariat is hosted by The World Academy of Sciences (TWAS) in Trieste, Italy, and by the US National Academies of Sciences, Engineering and Medicine in Washington, DC, USA.

IAP Science and IAP Health

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Additional administrative support is provided by TWAS, especially Patricia Presiren, Nino Coppola and Ezio Vuck. Both TWAS and IAP are hosted on the campus of the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy.

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The InterAcademy Partnership, Inc. is a 501(c)3 non-profit organization, registered in Washington, DC, USA, as a public charity.

Funds from the Government of Italy to support TWAS and IAP are provided to the United Nations Educational, Scientific and Cultural Organization (UNESCO), headquartered in Paris, France. Both TWAS and IAP (IAP Science and IAP Health) are considered 'programme units' of UNESCO, which provides administrative oversight for TWAS and IAP activities.

IAP Policy is hosted by the US National Academies of Sciences, Engineering and Medicine (NASEM) in Washington, DC, USA, and receives core funding support from US NASEM.



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